UNIVERSUM VR-4350

MODEL

SERVICE MANUAL

TABLE OF CONTENTS

SECTION 1 SUMMARY

KEY TO ABBREVIATIONS 1-1
IMPORTANT SAFETY PRECAUTIONS 1-2
- Precautions during Servicing

SAFETY CHECK AFTER SERVICING 1-3
- Insulation resistance test
- Dielectric strength test
- Clearance distance
- Leakage current test

INTRODUCTION 1-4
FEATURES 1-4
SPECIFICATIONS 1-4
LOCATION OF CUSTOMER CONTROLS 1-5

SECTION 2 CABINET & MAIN FRAME

SERVICE FIXTURE CONNECTING METHOD 2-1
1. SVC FIXTURE Connecting Method 2-1
2. Electrical Service Fixture List 2-2

CABINET DISASSEMBLY 2-3
1. Top Case, Bottom Cover 2-3
2. Front Panel 2-3

CIRCUIT BOARD DISASSEMBLY 2-3
1. Circuit Board Arrangement 2-3
2. Main Circuit Board (1) (Audio, Tuner/IF, Syscon, Servo) 2-4
3. Y/C Circuit Board (Y/C, F-OSD) 2-4
4. Timer/Key Function Circuit Board 2-4
5. Pre-Amp Circuit Board 2-4
6. Power Circuit Board 2-5
7. BS Circuit Board 2-5

EXPLODED VIEWS 2-5
1. Cabinet & Main Frame Section 2-5
2. Packing Accessory Section 2-7
3. Remote Control Section 2-7

SECTION 3 ELECTRICAL

ELECTRICAL ADJUSTMENT PROCEDURES 3-1
Electronic Test Equipment Requirement 3-1
1. Servo Circuit 3-1
2. Audio Circuit 3-1
3. Tuner/IF Circuit 3-2

BLOCK DIAGRAMS 3-3
1. Power (SMPS) Block Diagram 3-3
2. Audio Block Diagram 3-4
3. Servo, System Control & Timer Block Diagram 3-5
4. Y/C Block Diagram 3-7
5. Pre-Amp Block Diagram 3-9
6. Function OSD Block Diagram 3-10
7. Tuner/IF Block Diagram 3-11
8. BS Block Diagram 3-13

CIRCUIT DIAGRAMS 3-15
1. Power (SMPS) Circuit Diagram 3-15
2. Servo Circuit Diagram 3-19
3. Y/C Circuit Diagram 3-23
4. Audio Circuit Diagram 3-25
5. Timer Circuit Diagram 3-27
6. System Control Circuit Diagram 3-29
7. Tuner/IF Circuit Diagram 3-33
8. Premiere Circuit Diagram 3-35
9. Pre-Amp Circuit Diagram 3-37
10. Function OSD Circuit Diagram 3-39
11. BS Circuit Diagram 3-43
12. Connection Diagram 3-45

DECK JUNCTION 3-47
1. Deck Junction Circuit Diagram 3-47
2. Deck Junction P.C.Board 3-47

PRINTED CIRCUIT BOARD DIAGRAMS 3-49
1. Main 1 P.C.Board 3-49
2. Y/C P.C.Board 3-51
3. Function OSD P.C.Board 3-52
4. Power P.C.Board 3-53
5. Pre-Amp P.C.Board 3-54
6. Timer P.C.Board 3-53
7. Key Function P.C.Board 3-54
8. IF P.C.Board 3-55
9. Junction P.C.Board 3-56
10. SCART P.C.Board 3-55
11. BS P.C.Board 3-57

SECTION 4 MECHANISM

NOTE) The table of contents for this section is edited separately.

SECTION 5 REPLACEMENT PARTS LIST

REPLACEMENT PARTS LIST 5-1
- Mechanical Section 5-1
- Cabinet & Main Frame Section 5-5
- Packing Accessory Section 5-6
- Remote Control Section 5-6
- Fixture Section 5-6
- Electrical Section 5-7

SECTION 1 SUMMARY

KEY TO ABBREVIATION

A	AC	:Alternating Curent
	ACC	:Automatic Color Control
	ACSS	:Automatic Channel Setting System
	ADJ	:Adjust
	A/E	:Audio Erase
	AFC	:Automatic Frequency Control
	AFT	:Automatic Fine Tuning
	AGC	:Automatic Gain Control
	A.H.SW	:Audio Head Switch
	ALC	:Automatic Level Control
	AM	:Amplitude Modulation
	AMP	:Amplifier
	ANT	:Antenna
	APC	:Automatic Phase Control
	ASS'Y	:Assembly
	AUX	:Auxiliary
B	B	:Base
	BGP	:Burst Gate Pulse
	BPF	:Bandpass Filter
	BS	:Brodcasting Satellite
	B/W or B/W	:Black and White
C	C	:Capacitor, Chroma, Collector
	CAN	:Cancel
	CAP	:Capstan
	CAP.BRK	:Capstan Brake
	CAP.RVS	:Capstan Reverse
	CATV	:Cable Television
	CBA	:Circuit Board Assembly
	CCD	:Charge Coupled Device
	C.CTL	:Chro Control, Capstan Control
	CFG	:Capstan Frequency Generator
	CHROMA	:Chrominance
	CNR	:Chroma Noise Reduction
	COMB	:Combination Comb Filter
	COMP	:Comparator Composite Compensation
	CONV	:Converter
	C.ROT SW	:Color Rotary Switch
	CS	:Chip Select
	C.SYNC	:Composite Synchronization
	CTL DIV	:Control Divide
	CUR	:Current
	CYL	:Cylinder
D	D	:Drum, Digital, Diode, Drain
	D.ADJ	:Drum Adjust
	DC	:Direct Current
	D.CTL	:Drum Control
	DEMOD	:Demodulator
	DET	:Detect
	DEV	:Deviation
	DHP	:Double High Pass
	DIGITRON	:Digital Display Tube
	DL	:Delay Line
	DOC	:Drop Out Compensator
	DUB	:Dubbing
	D.V SYNC	:Dummy Vertical Synchronization
E	E	:Emitter
	EE	:Electric to Electric
	EMPH	:Emphasis
	ENA	:Enable
	ENV	:Envelope
	EP	:Extended Play
	EQ	:Equalizer
	EXP	:Expander
F	F	:Fuse
	FB	:Feed Back
	FBC	:Feed Back Clamp
	FE	:Full Erase
	FG	:Frequency Generator
	FL	:Filter
	FM	:Frequency Modulation
	F/R	:Forward/Reverse
	FS	:Frequency Synthesizer
	FSC	:Subcarrier Frequency
	F/V	:Frequency Voltage
G	GEN	:Generator
H	H	:High, Horizontal
I	IC	:Intergrated Circuit
	IF	:Intermediate Frequency
	INS	:Insert
L	L	:Low, Left, Coil
	LD	:Loading
	LD VTG CTL	:Loading Voltage Control
	LECHA	:Letter Character
	L.M	:Level Meter
	LP	:Long Play
	LPF	:Low Pass Filter
M	MAX	:Maximum
	MD	:Modulator
	MECHA.CTL	:Mechanism Contro
	MIC	:Microphone
	MIN	:Minimum
	MIX	:Mixer, Mixing
	M.M.	:Mono Multi Vibrator
	MMV	:Monostable Multivibrator
	MOD	:Modulation, Modulator
	MODEN	:Modulation-Demodulator
	MPX	:Multiplex
N	NR	:Noise Reduction
O	OSC	:Oscillator
	OSD	:On Screen Displa
P	PB	:Playback
	PCB	:Printed Circuit Board
	P.CTL	:Power Control
	PER-AMP	:Preamplifier
	P.F	:Power Failure
	PG	:Pulse Generator
	PLL	:Phase Locked Loop
	PREM.DET	:Premire Detect
	P-P	:Peak to Peak
	PS	:Phase Shift
	PWM	:Pulse Width Modulation
	PWR CTL	:Power Control
Q	Q	:Transistor
	QH	:Quasi Horizontal
	QSR	:Quick Set Record
	QTR	:Quick Timer Record
	QV	:Quasi Vertical
R	R	:Resistor, Right
	RE(or RC)	:Remocon, Receiver
	REC	:Recording
	REC S.'H'	:Record Start 'High'
	REF	:Reference
	REG	:Regulated, Regulator
	REMOCON	:Remote Control(unit)
	RF	:Radio Frequency
	R/P	:Record/Playback
	RTC	:Real Time Counter
S	S	:Serial
	S.ACCEL	:Slow Accel
	SAOP	:Second Audio Program
	SC	:Scart, Simulcast
	S.DET	:Secam Detect
	SH	:Shift
	SHARP	:Sharpness
	SIF	:Sound Intermediate Frequency
	SLD	:Side Locking
	S/N	:Signal to Noise Ratio
	SP	:Standard Play
	ST	:Stereo
	SUB	:Subtract, Subcarrier
	SW or S/W	:Switch
	SYNC	:Synchronization
	SYSCON	:System Control
T	T	:Coil
	TP	:Test Point
	TR	:Transistor
	TRK	:Tracking
	TRANS	:Transformer
	TU	:Tuner Take-Up
U	UHF	:Ultra Hight Frequency
	UNREG	:Unregulated
V	V	:Volte, Vertical, Video
	VA	:Voltage Alive
	VCO	:Voltage Controlled Oscillator
	VGC	:Voltage Gain Control
	VHF	:Very High Frequency
	V.H.SW	:Video Head Switch
	VISS	:VHS Index Search System
	VPS	:Video Program System
	VR	:Variable Resistor or Volume
	V-SYNC	:Vertical Synchronization
	VTG	:Voltage
	VV	:Video to Video
	VXO	:Voltage X-tal Oscillator
W	W	:Watt
	WHT	:White
	W/O	:With Out
X	X-TAL	:Crystal
Y	Y/C	:Luminance/Chrominance
	YNR	:Luminance Noise Reduction
Z	ZD	:Zener Diode

IMPORTANT SAFETY PRECAUTIONS

Prior to shipment from the factory, the products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

• Precautions during Servicing

1. Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product. When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.

2. Parts identified by the ⚠ symbol and shaded (■) parts are critical for safety.
   Replace only with specified part numbers.
   Note: Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.

3. Use Specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads

4. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers
   4) Insulation sheets for transistor

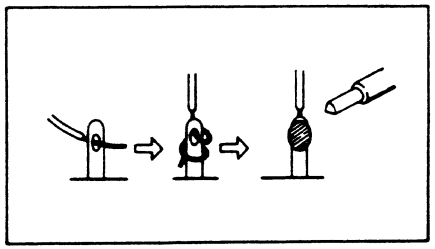


Fig. 1

5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.(Fig. 1)

6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

7. Check that replaced wires do not contact sharp edged or pointed parts.

8. When a power cord has been replaced, check that 10-15Kg of force in any direction will not loosen it.(Fig. 2)

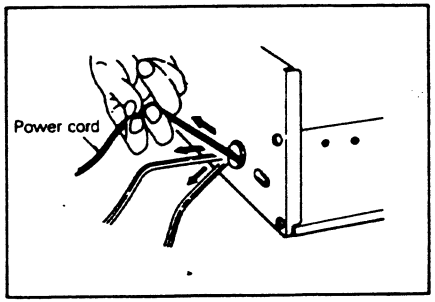


Fig. 2

9. Also check areas surrounding repaired locations.

10. Products using cathode ray tubes (CRTs)
    In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission. Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the parts specified. Under no circumstances attempt to modify these circuits. Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

SAFETY CHECK AFTER SERVICING

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions. Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

• Insulation resistance test

Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table below.

• Dielectric strength test

Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table below.

• Clearance distance

When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See table below.

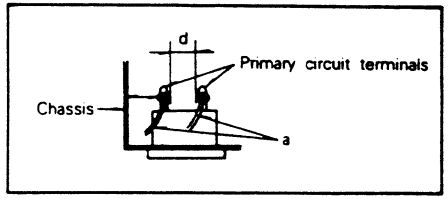


Fig. 3

Table 1:Ratings for selected areas

AC Line Voltage	Region	Insulation Resistance	Dielectric Strength	Clearance Distance(d),(d')
*110 to 130 V 200 to 240 V	Europe Australia	≧10 MΩ/500 V DC	4kV 1 minute	≧6mm(d) ≧8mm(d') (a: Power cord)

*Class II model only.

Note. This table is unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

• Leakage Current test

Confirm specified or lower leakage current between B(earth ground, power cord plug prongs) and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.)

Measuring Method: (Power ON)
Insert load Z between B(earth ground, power cord plug prongs) and exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See figure and following table.

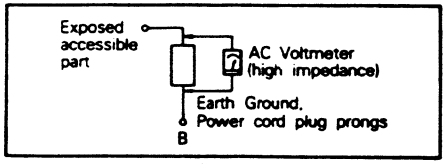


Fig. 4

Table 2:Leakage current ratings for selected areas

AC Line Voltage	Region	Load Z	Leakage Current(I)	Earth Ground (B) to:
100 to 130 V	Europe	2kΩ	I≦0.7m A peak I≦2m A dc	Antenna earth terminals
200 to 240 V	Australia	50kΩ	I≦0.7m A peak I≦2m A dc	Other terminals

Note. This table is unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

INTRODUCTION

This service manual provides a variety of service information. It contains the mechanical structure of the Video Cassette Recorder (VCR) together with mechanical adjustments and the electronic circuits in schematic form.

This VCR was manufactured and assembled under our strict quality control standards and meets or exceeds industry specifications and standards.

FEATURES

- 2-head system
- HQ, High Quality picture enhancement system improves image sharpness and detail
- 8 event/1 year programmable timer with everyday recording
- Programmable channel memory with frequency synthesized tuner (up to 99 positions)
- Full function infrared remote control
- QSR, Quick Set Recording with standby (up to 9 hours)
- Auto Power and Play Function
- Automatic Rewind
- Jet Search, Logic Search Function
- Tape Remaining time Display Function
- Fine Still, Frame Advance Function
- VISS (VHS Index Search System) Function
- Auto Head Cleaner
- Quick Start Function
- Real Time Counter
- Digital Auto Tracking System
- Child Lock Function
- Centre Mechanism
- ACSS (Automatic Clock Setting System) Function
- ACMS (Automatic Channel Mapping System) plus- the channels will be preset, sorted and memorized automatically.
- VPS (Video Programming System)
- Built in ShowView Programming
- Premiere Compatible
- Equipped with a satellite tuner preset for ASTRA stations

* ShowView is a trademark applied for by Gemstar Development Corp.
ShowView system is manufactured under license from Gemstar Development Corporation.

SPECIFICATIONS

General

Power Source :	AC 230V ± 10%, 50Hz
Power Consumption :	Approx. 38 Watts
Video Recording System :	2 heads helical scanning system
Tape Speed :	23.39mm/sec (SP mode)
Tape Format :	Tape Width 1/2" (12.7mm high density tape VHS).
Maximum Recording Time :	4hours at SP mode (with E-240 cassette)
FF/Rewind Time :	Less than 300secs (with E-180 cassette)
Dimensions (W × H × D) :	16.9" × 3.9" × 14.1" (430 × 100 × 357mm)
Weight :	About 13.5 lbs (6.1kg)
Operating Temperature :	41° F-95° F (5° C-35° C)
Operating Humidity :	35%~80%
Timer :	24hours display type

Video

Television System :	CCIR standard (625 lines, 50 fields) PAL/SECAM Colour signal
Recording Format :	PAL/MESECAM
RF Reception :	PAL
RF OUT :	PAL G
Input Level :	VIDEO IN (SCART type) 2.0Vp-p, 75ohm, unbalanced
Output Level :	VIDEO OUT (SCART type) 2.0Vp-p, 75ohm, unbalanced
Signal to Noise Ratio :	More than 43dB
RF Modulator :	UHF Channels 32-40 (Adjustable)

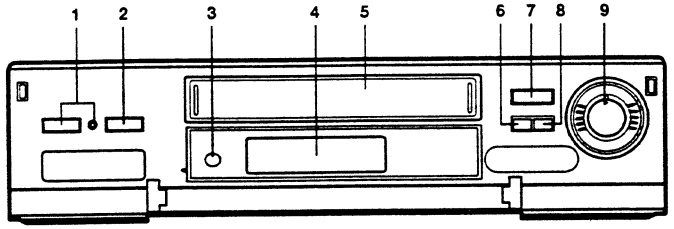
Audio

Input Level :	AUDIO IN (SCART type) 0dBm More than 50Kohm
Output Level :	AUDIO OUT (SCART type) 0dBm Less than 1Kohm
Audio Track :	Mono track type
Audio Frequency Response :	Normal : 100Hz~10KHz ($^{+3}_{-6}$ dB)
Signal to Noise Ratio :	More than 43dB

* Designs and specifications are subject to change without notice.

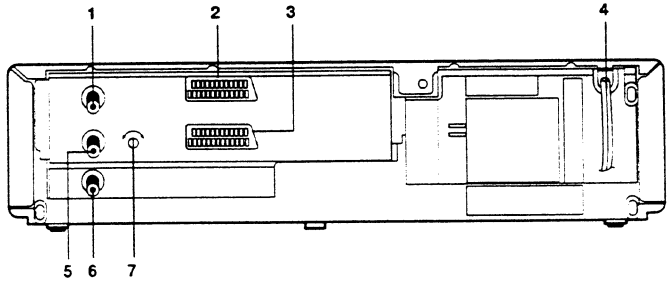
LOCATION OF CUSTOMER CONTROLS

FRONT



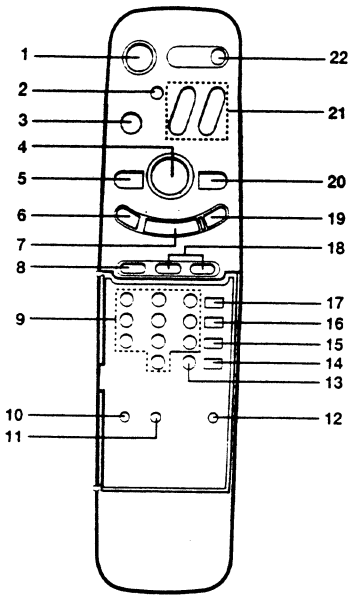
1. POWER BUTTON AND INDICATOR
2. STOP/EJECT BUTTON
3. REMOTE SENSOR WINDOW
4. MULTI-FUNCTION DISPLAY
5. CASSETTE COMPARTMENT
6. PAUSE/STILL BUTTON
7. PLAY BUTTON
8. RECORD/QSR BUTTON
9. SHUTTLE RING

REAR



1. AERIAL INPUT
2. EURO-AV1 SOCKET
3. EURO-AV2 SOCKET
4. MAINS LEAD
5. RF OUTPUT
6. SAT SOCKET
7. RF CHANNEL CONTROL

REMOTE CONTROL



1. POWER BUTTON
2. OK BUTTON
3. MENU BUTTON
4. PLAY BUTTON
5. REWIND /REVIEW BUTTON
6. PAUSE/STILL BUTTON
7. STOP BUTTON
8. SHOWVIEW BUTTON : ★
9. NUMBER BUTTON "0" THROUGH "9"
10. FRAME ADVANCE BUTTON
11. AUTO TRACKING BUTTON
12. TV/VCR BUTTON : ★
13. AV BUTTON
14. VPS BUTTON : ★
15. VISS BUTTON
16. TAPE COUNTER RESET BUTTON
17. CLOCK/TAPE COUNTER/TAPE REMAIN SELECT BUTTON
18. PROGRAMME/TRACKING BUTTONS
19. RECORD/QSR BUTTON
20. FAST FORWARD/CUE BUTTON
21. CURSOR BUTTONS
22. EJECT BUTTON

※ ★ : Optional Function

SECTION 2 CABINET & MAIN FRAME

SERVICE FIXTURE CONNECTING METHOD

1. SVC FIXTURE Connecting Method

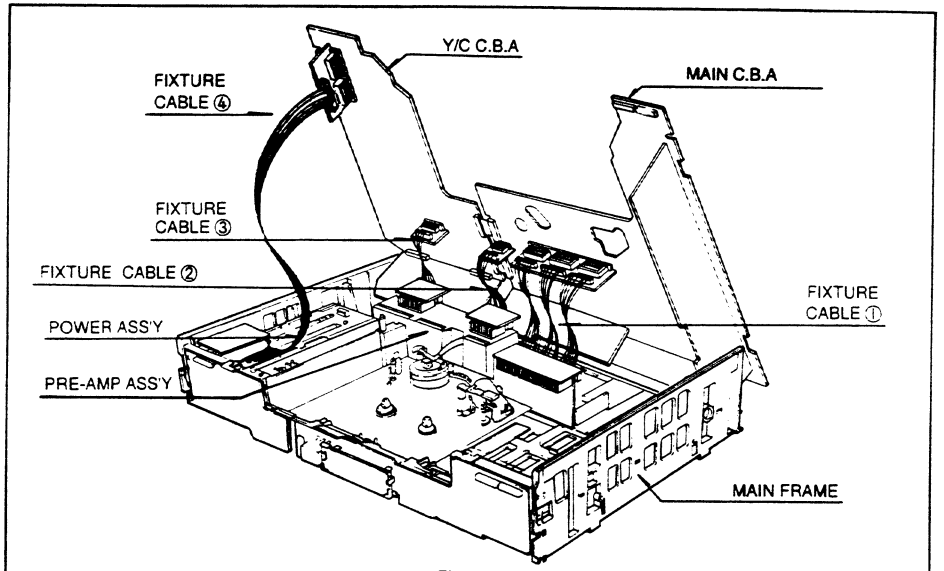


Fig. 2-a

a) Connect the FIXTURE Cable ① between Main C.B.A and Junction C.B.A. (P2D15. P2D14, P2D13)
b) Connect Y/C C.B.A and Main C.B.A to Pre-Amp Ass'y with the FIXTURE Cable ②, ③ (P3809=P8302, P4816=P8403).
c) Connect the FIXTURE Cable ④ between Y/C C.B.A and Power Ass'y. (P3102=PP302, P3103=PP301)

1-1. FIXTURE Cable ① Connecting Method (See Fig. 2-a, 2-b)

a) Connect the connector of "MAIN" mark of FIXTURE Cable ① with the Main C.B.A and the connector of "JUNCTION" mark with the Junction C.B.A.
b) At this time, should be in the left side " ◄ LEFT" mark on the P.C.B of the FIXTURE Cable ①.

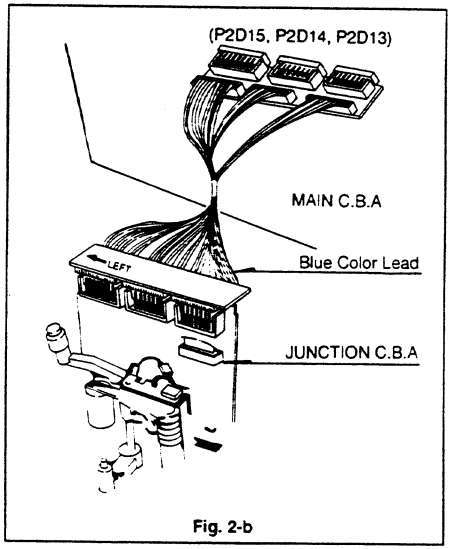


Fig. 2-b

1-2. FIXTURE Cable ②, ③ Connecting Method (See Fig. 2-a, 2-c)

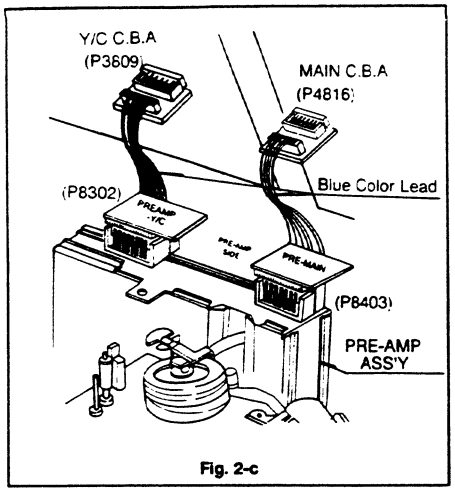


Fig. 2-c

a) Connect the FIXTURE Cable ②, ③ with "PREAMP-Y/C" and "PRE-MAIN" marked on the PCB are placed in a right position to Pre-Amp Ass'y.
b) Connect the FIXTURE Cable ③ with "Y/C-PREAMP" marked on the PCB is placed on the left side to Y/C C.B.A.
c) Connect the FIXTURE Cable ② with "MAIN-PRE" marked on the PCB is placed on the right side to Main C.B.A.

1-3. FIXTURE Cable ④ Connecting Method (See Fig. 2-a, 2-d)

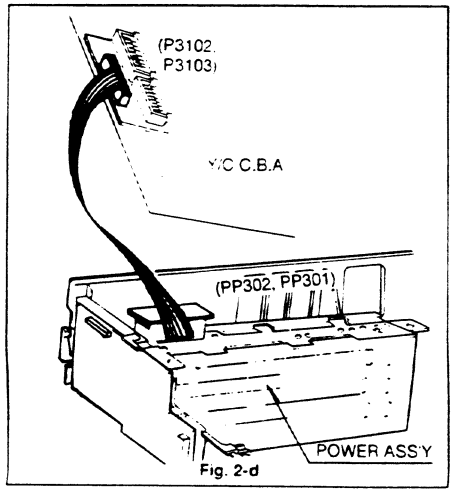


Fig. 2-d

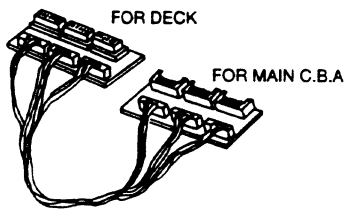
a) Connect the connector of "POWER-Y/C" mark of FIXTURE Cable ④ with Y/C C.B.A and the connector of "Y/C-POWER" mark with the Power Ass'y.

2. Electrical Service Fixture List

A. Fixture Cable Total Assembly (FIX)
Parts No.: 960-015N (Optional Parts)

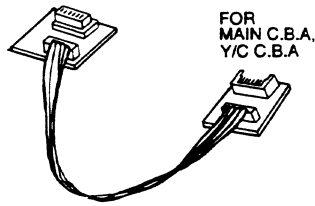
B. Fixture Cable ①. (FIX 1)

Parts No.: 232-972A (Optional Parts)



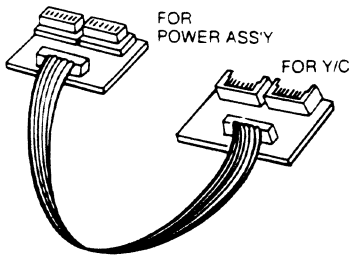
C. Fixture Cable ②, ③. (FIX 2, FIX 3)

Parts No.: 6871R-0233A (FIX 2) (Optional Parts)
6871R-0233B (FIX 3)



D. Fixture Cable ④. (FIX 4)

Parts No.: 6871R-0233C (Optional Parts)



CABINET DISASSEMBLY

1. Top Case, Bottom Cover

A. Release 5 screws (A). (See Fig. 2-1)
B. Hold the back of Top Case and lift it up slightly backward to remove it.
C. Release 8 screws (B). (See Fig. 2-1)
D. Remove the Bottom Cover.

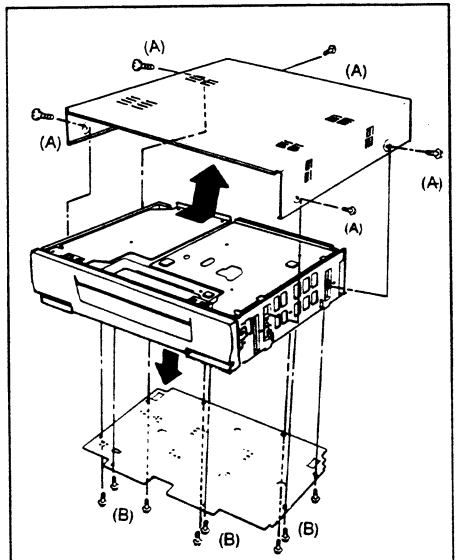


Fig. 2-1

• Caution

When reassemble the Front Panel, assemble it in condition of inserting the Door Cassette inside, as shown in Fig. 2-3.

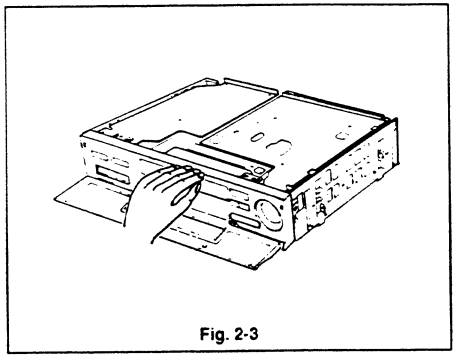


Fig. 2-3

2. Front Panel

A. Remove the Top Case. (See Fig. 2-1)
B. Remove the Bottom Cover. (See Fig. 2-1)
C. Remove the Shuttle Ring in the direction of arrow (1).
D. Remove the stoppers on the top of Front Panel.
E. Remove the stoppers on the bottom of Front Panel.

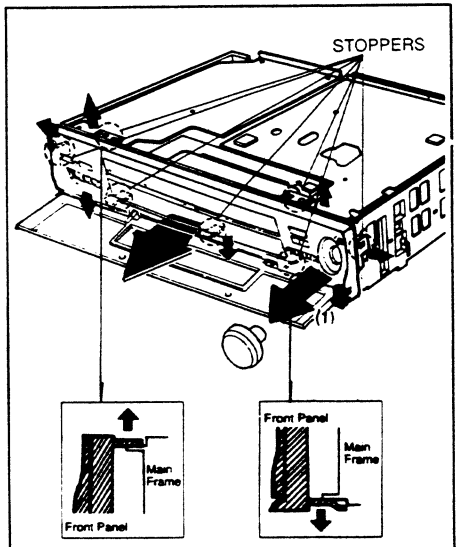


Fig. 2-2

CIRCUIT BOARD DISASSEMBLY

1. Circuit Board Arrangement

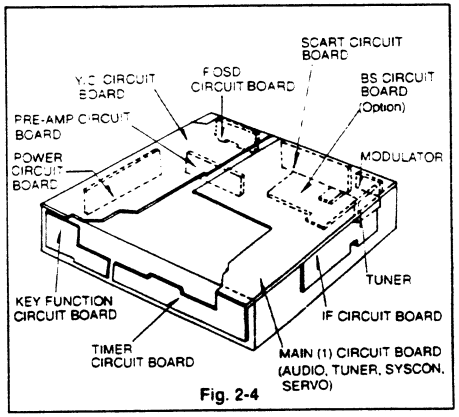


Fig. 2-4

2. Main Circuit Board (1) (Audio, Tuner/IF, Syscon, Servo)

A. Release 4 screws (D). (See Fig. 2-5)
B. Disconnect the connector between Main Circuit Board and Timer Circuit Board.
C. Lift the rear part up and pull the P.C.Board backward.
D. Remove the connector for complete removal.

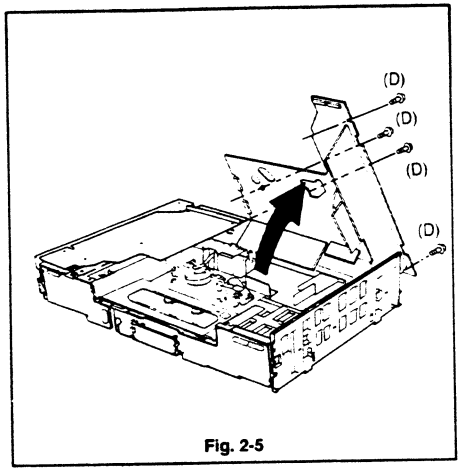


Fig. 2-5

3. Y/C Circuit Board (Y/C, F-OSD)

A. Release 4 screws (E). (See Fig. 2-6)
B. Disconnect the connector between Main Circuit Board and Timer Circuit Board.
C. Disconnect the connector between Main Circuit Board and Power Circuit Board.
D. Lift the rear part up and pull the P.C.Board backward.
E. Remove the connector for complete removal.

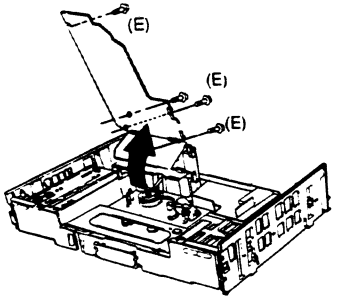


Fig. 2-6

4. Timer/Key Function Circuit Board

A. Pull the P.C.Board toward you while pressing 9 stoppers in the direction of the arrows to disengage, and remove the P.C.Board. (See Fig. 2-7)
B. Remove the connector for complete removal.

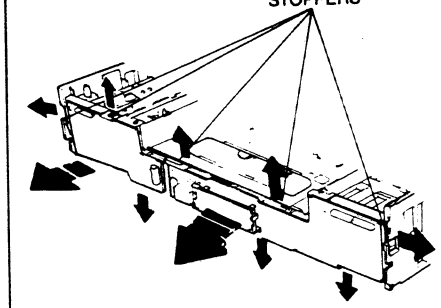


Fig. 2-7

5. Pre-Amp Circuit Board

A. Release 2 screws (F). (See Fig. 2-8)
B. Remove Pre-Amp Package from Main Frame in the direction of arrow (2).
C. Remove bracket Pre-Amp from Pre-Amp Package.
D. Remove Pre-Amp Circuit Board from Pre-Amp Package.

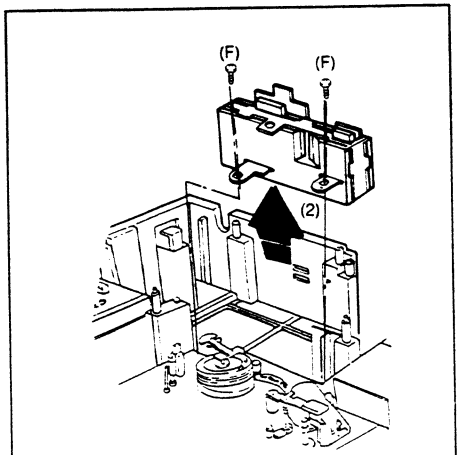
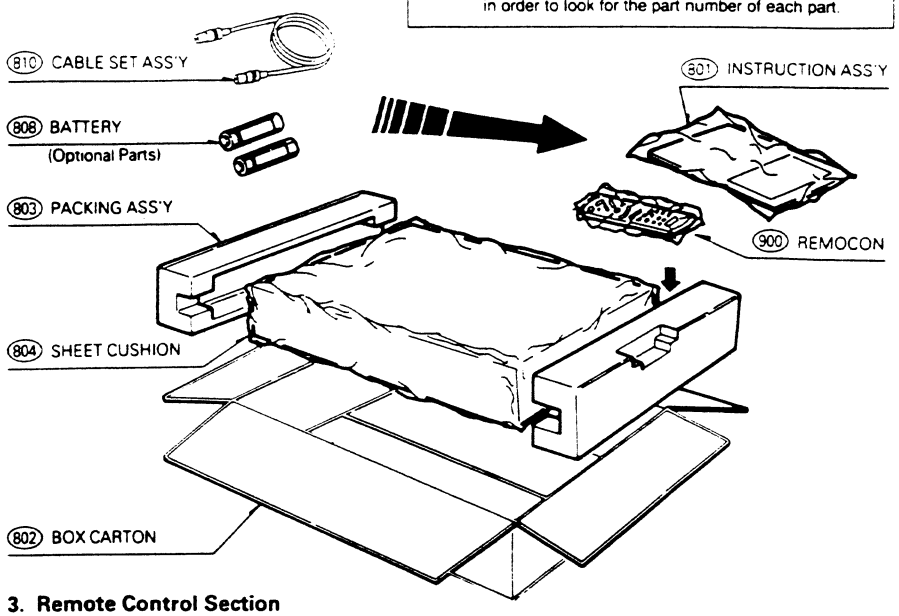


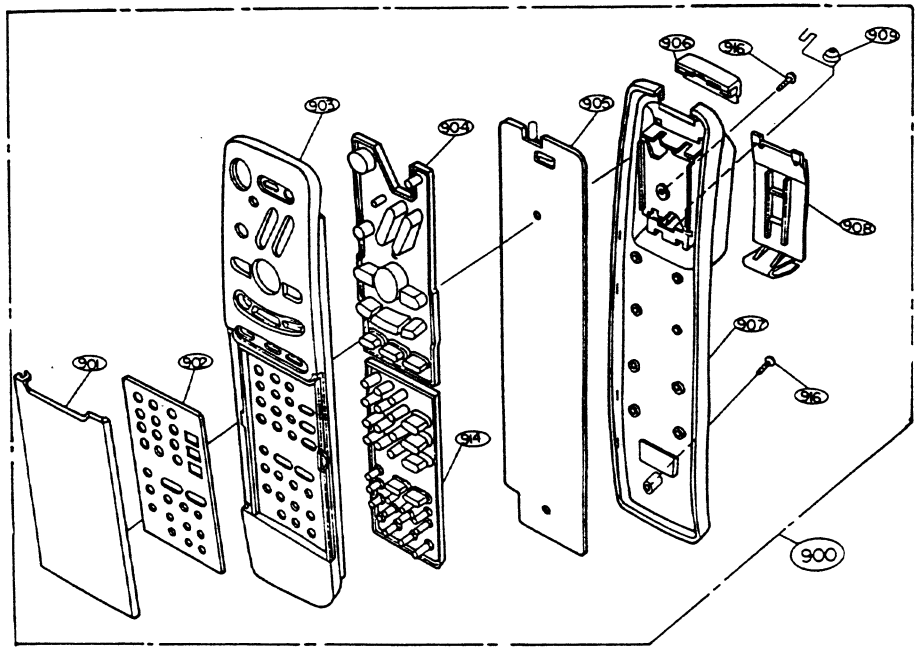
Fig. 2-8

2. Packing Accessory Section

NOTE) Refer to "SECTION 5 REPLACEMENT PARTS LIST" in order to look for the part number of each part.



3. Remote Control Section



MEMO

SECTION 3 ELECTRICAL
ELECTRICAL ADJUSTMENT PROCEDURES

Electronic Test Equipment Requirement:

- Oscilloscope
- Video Signal Generator - PAL
- Level Meter
- + Driver
- Test Tape (SP)-PAL
- Recording Tape
- Digital Voltmeter

1. Servo Circuit

1) ±PG Adjustment

MODE	SPECIFICATION	MEASUREMENT POINT	ADJUSTMENT POINT
Playback	6.5H±0.5H (416μsec, 1H=64μsec)	TP201 (H. SW) W404 (Video Out Terminal)	VR201

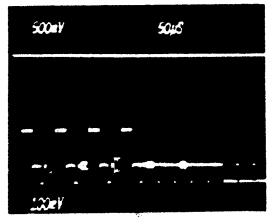
Purpose:
It is for the phase dividing of the Video A, B heads with 180° and the exact tracing of each track to meet head switching point with VHS Spec.

Procedure:
a. Playback a PAL/SP test tape.
b. At this time, the "ATR" is lighting, after pressing the PROG (+) or PROG (-) and adjust the X-Value.
c. Connect CH-1 terminal of oscilloscope to TP201 H. SW, and CH-2 terminal to video out terminal (W404) of VCR.
d. Trigger the complex Video signal of CH-2 to CH-1 H.SW, and adjust VR201 so that the distance from A(B) head selection point of H.SW signal to the starting point of horizontal synchronized signal is 6.5H (416μsec, 1H=64μsec).

Reference)
1. ±PG adjustment is practiced in the state of maximum RF level and locked servo system. (MTR Mode.)
2. The deviation between A/B Head Adjustment location should be within ±0.5H (32μsec).
3. The deviation between the specification of adjustment and the practical measurement value should be within ±0.5H (32μsec).
4. Oscilloscope and VCR set should be connected with GND.

Waveform

Composite Video Signal



6.5H (416μsec)
H.SW (TP201)

Fig. 3-1

2. Audio Circuit

1) Record Oscillation Voltage Adjustment

MODE	SPECIFICATION	MEASUREMENT POINT	ADJUSTMENT POINT
Record	2.6±0.2mV	TP451 (-), TP452 (+)	VR451

Purpose:
This is for adjusting bias voltage to specification in recording.

Procedure:
a. Connect the (-) terminal of Level Meter to TP451 (-).
b. Connect the (+) terminal of Level Meter to TP452 (+).
c. Confirm that the Oscillation Voltage is 2.6±0.2mV.
d. At this time, Adjust VR451 so that the Oscillation voltage fit to specification.

Reference:
The Set and Oscilloscope should be connected with 1:1 probe.

3. Tuner/IF Circuit

1) AFC Adjustment

MODE	SPECIFICATION	MEASUREMENT POINT	ADJUSTMENT POINT
CH-11 (217.25MHz) PAL Reception	DC 2.5±0.1V	ICA01 Pin ⑮	TA01

Procedure:

a. Select the TV Programme Mode on OSD Menu.
b. Select the PAL on the TV Programme Mode.
c. Be tuning CH-11 (217.25MHz, strength of RF electrical field : 70dBμV) fine.
d. Connect the Digital Voltmeter to ICA01 Pin ⑮.
e. Adjust TA01 so that the Digital Voltmeter is DC 2.5±0.1V.

2) RF AGC Adjustment

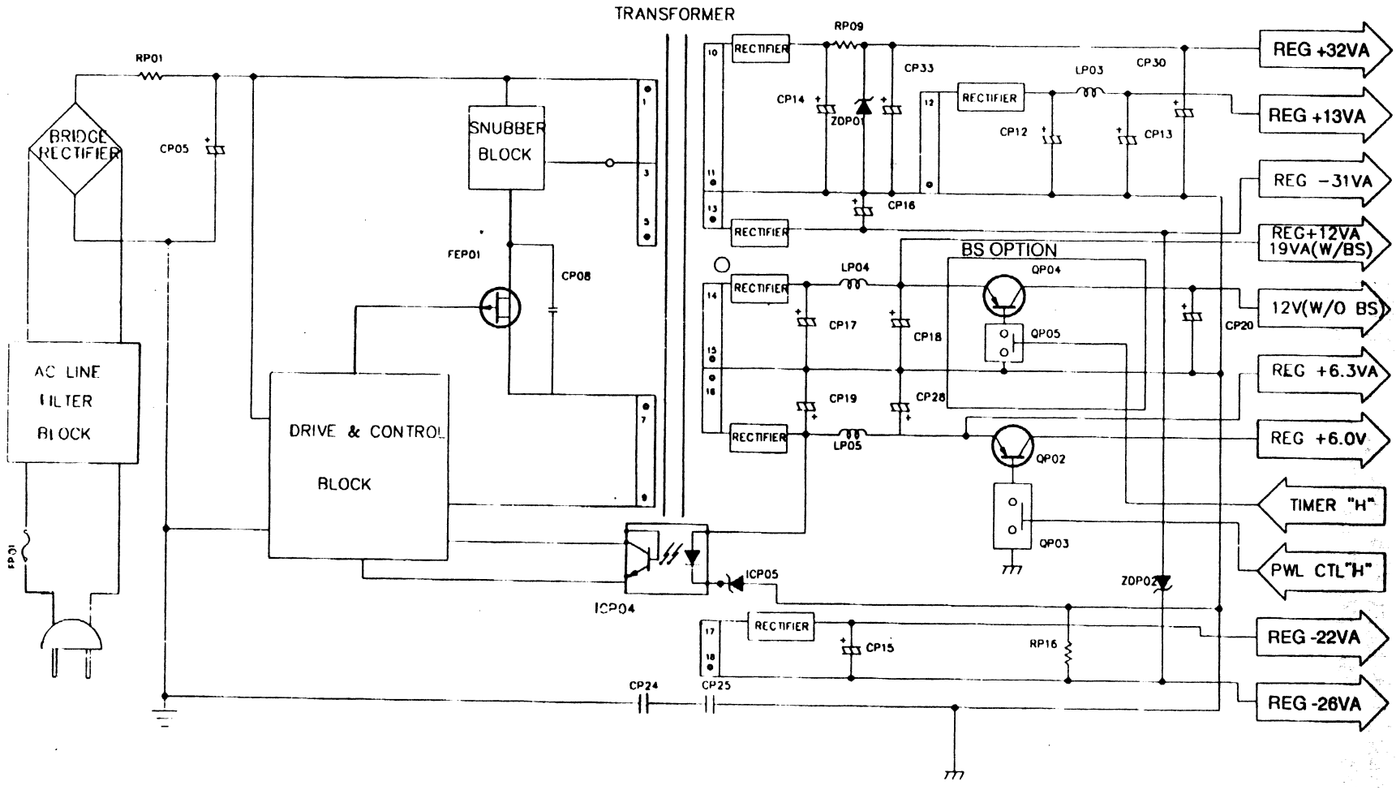
MODE	SPECIFICATION	MEASUREMENT POINT	ADJUSTMENT POINT
CH-11 (217.25MHz) Normal Reception	DC 4.8± 0.1V	TUNER AGC Terminal	VR701

Procedure:

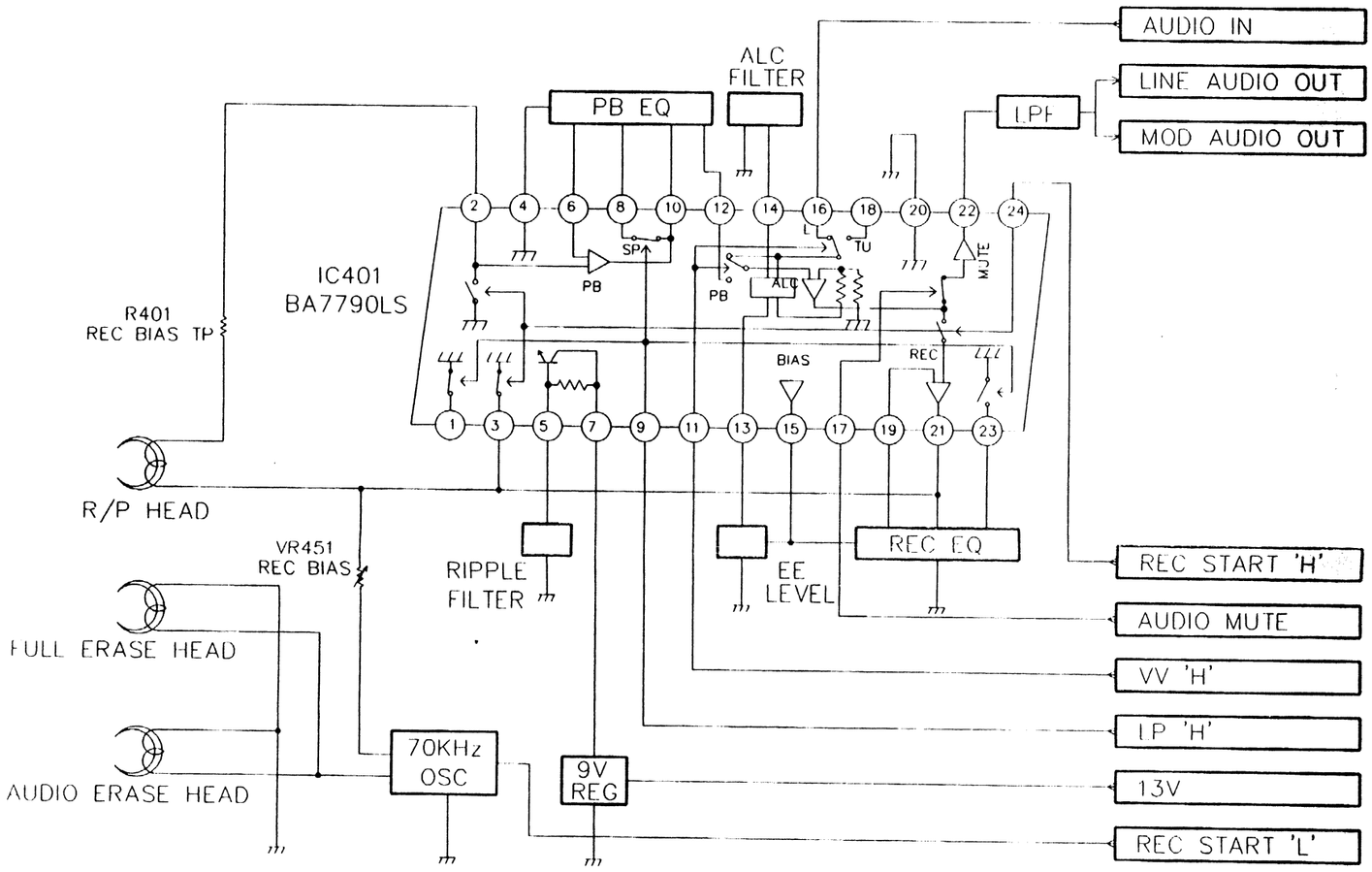
a. Be tuning CH-11 (217.25MHz, strength of RF electric field: 70dBμV) fine.
b. Connect the Digital Voltmeter to AGC terminal of TU701.
c. Adjust VR701 so that the Digital Voltmeter is DC 4.8±0.1V.

BLOCK DIAGRAMS

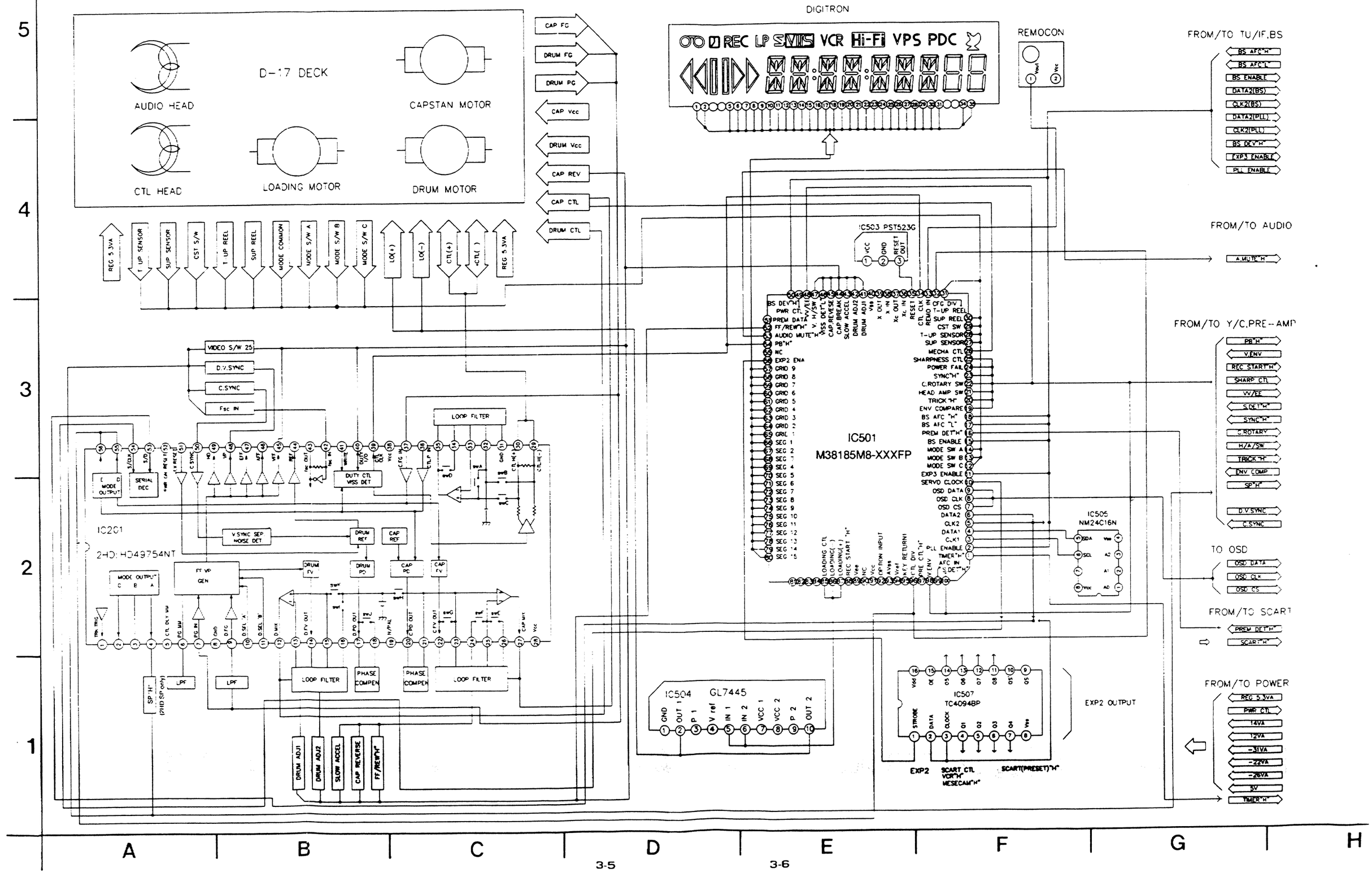
1. Power (SMPS) Block Diagram



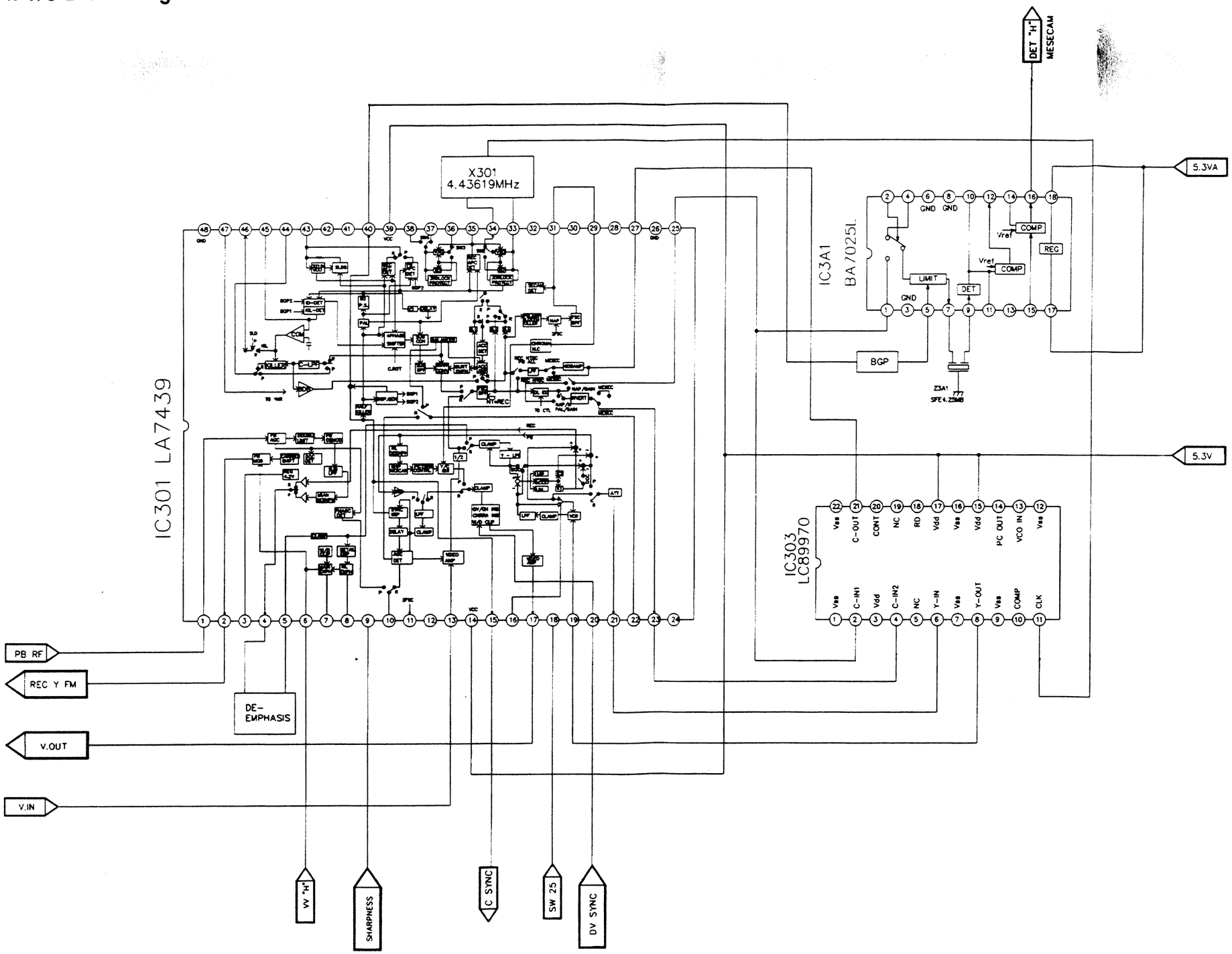
2. Audio Block Diagram



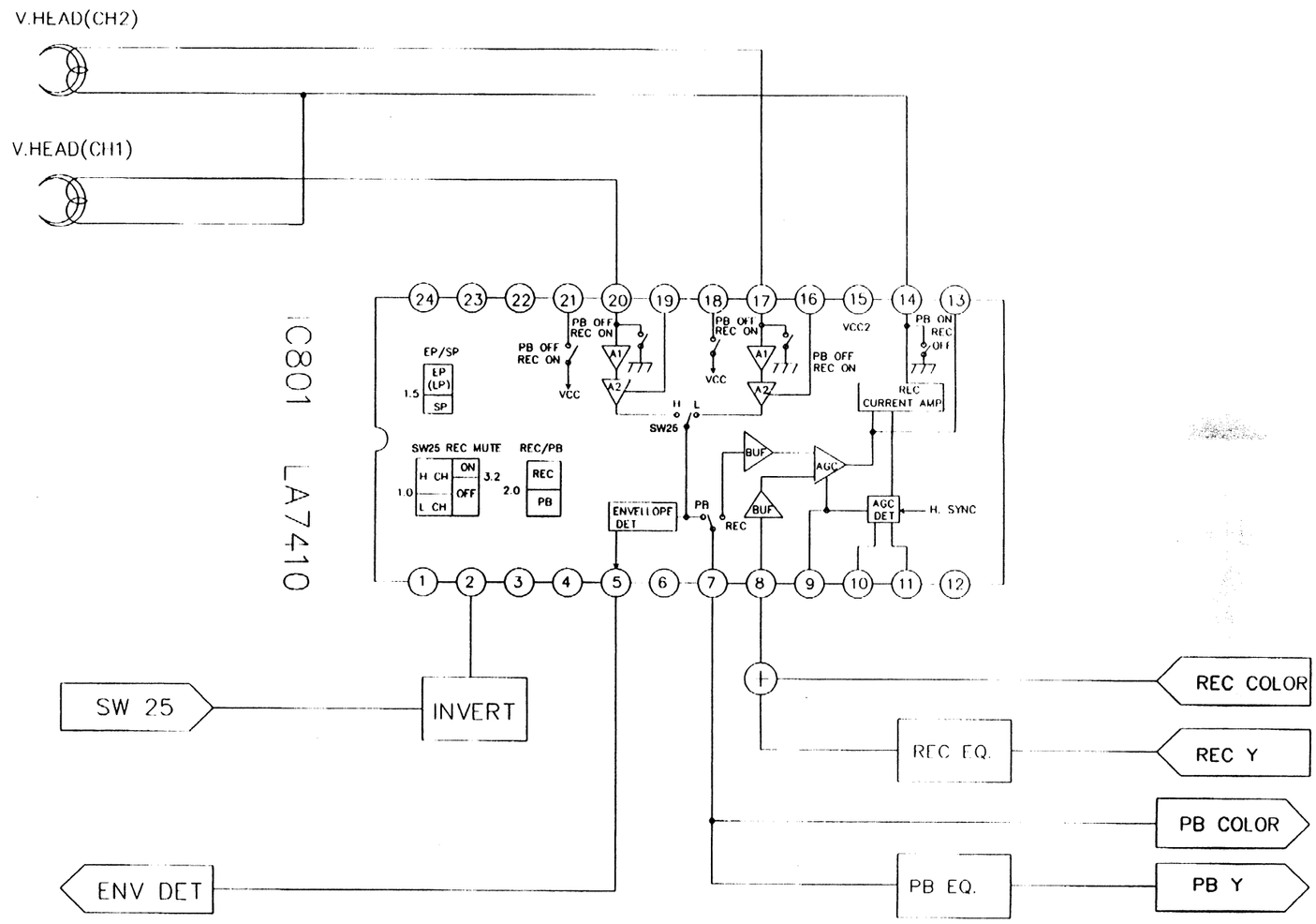
3. Servo, System Control & Timer Block Diagram



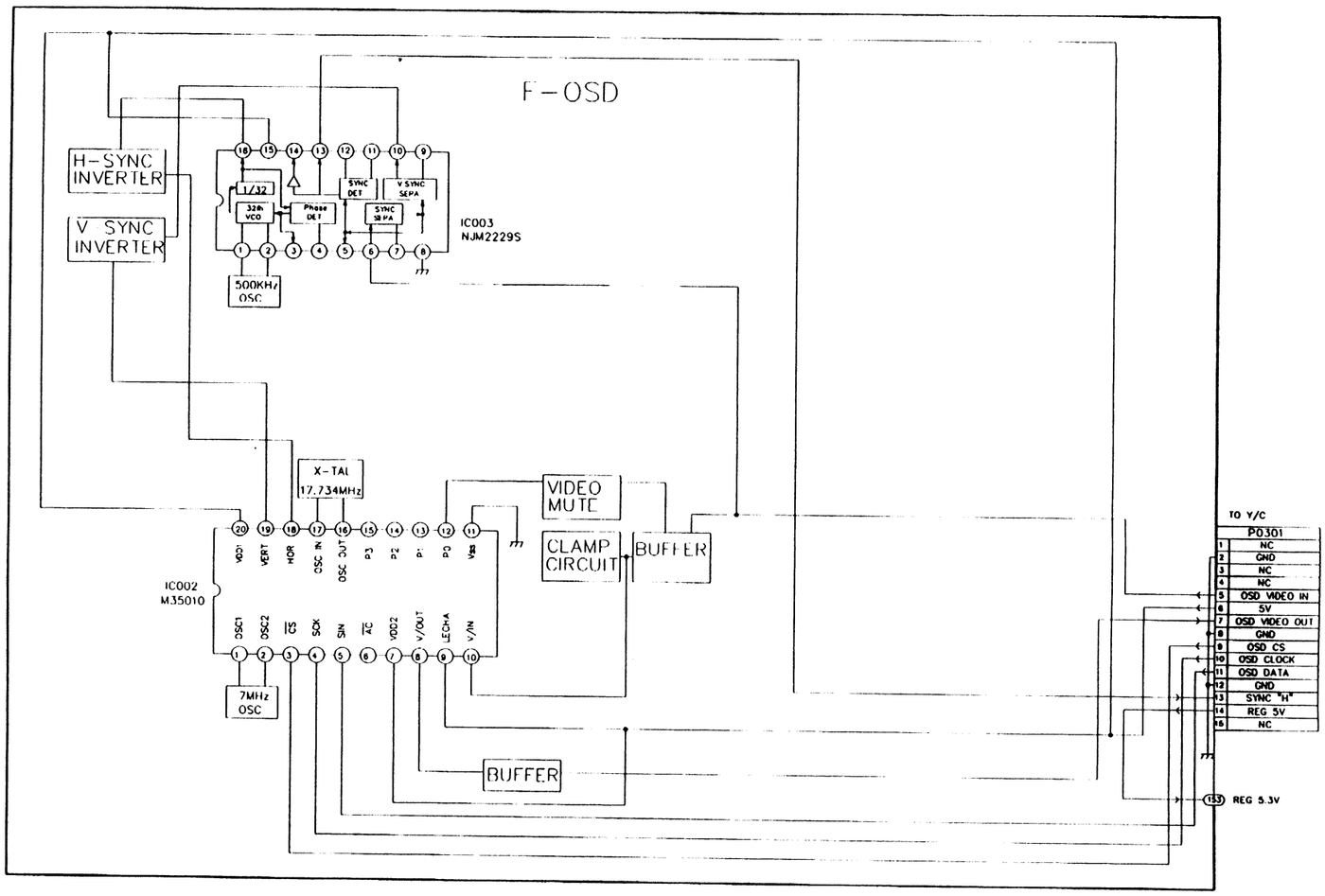
4. Y/C Block Diagram



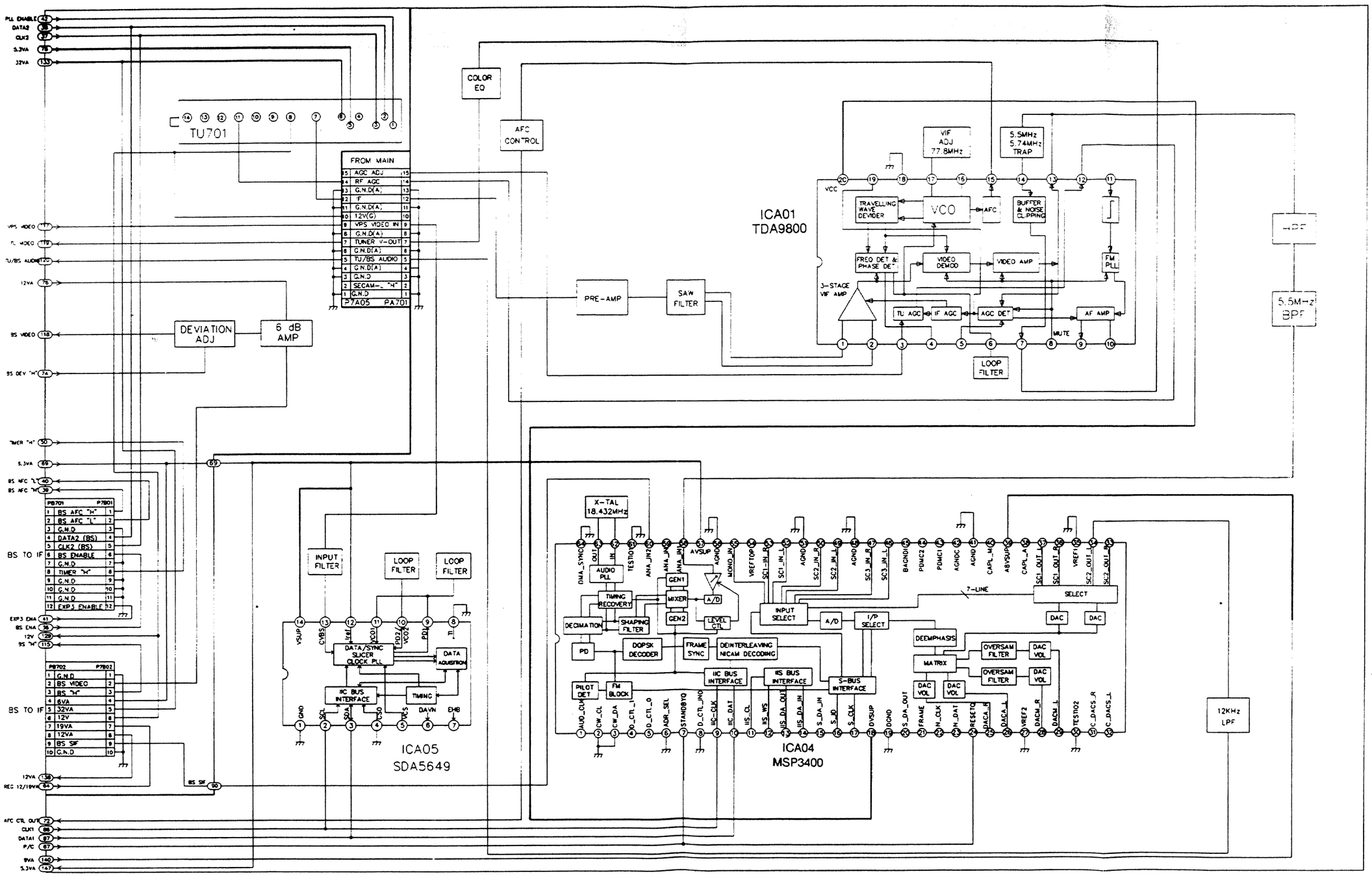
5. Pre-Amp Block Diagram



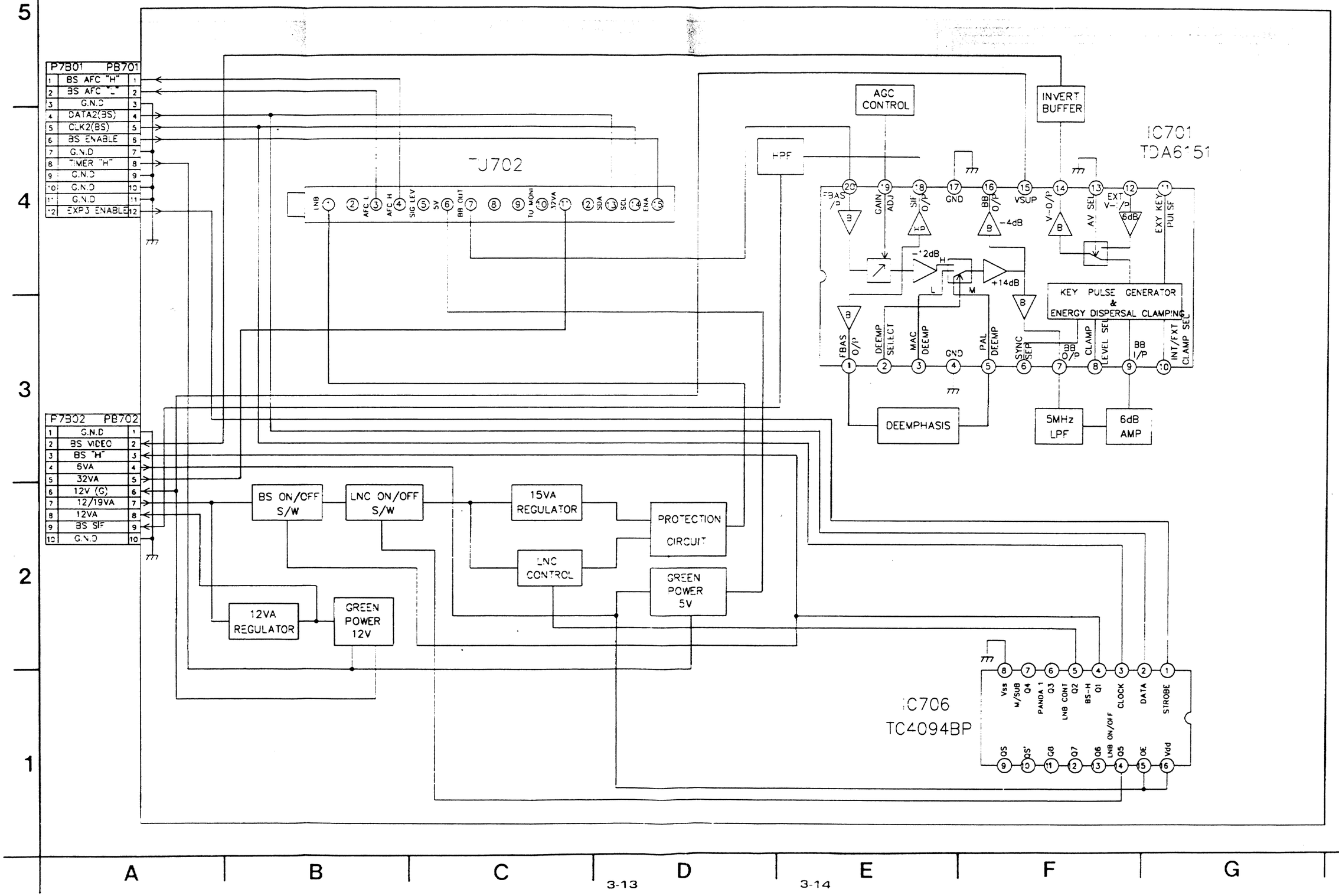
6. Function OSD Block Diagram



7. Tuner/IF Block Diagram



8. BS Block Diagram



CIRCUIT DIAGRAMS

1. Power (SMPS) Circuit Diagram

Note : The components identified by mark ⚠ are critical for safety.
Replace only with part number specified.
Warning : Parts that are shaded are critical with respect to risk of fire and electrical shock.

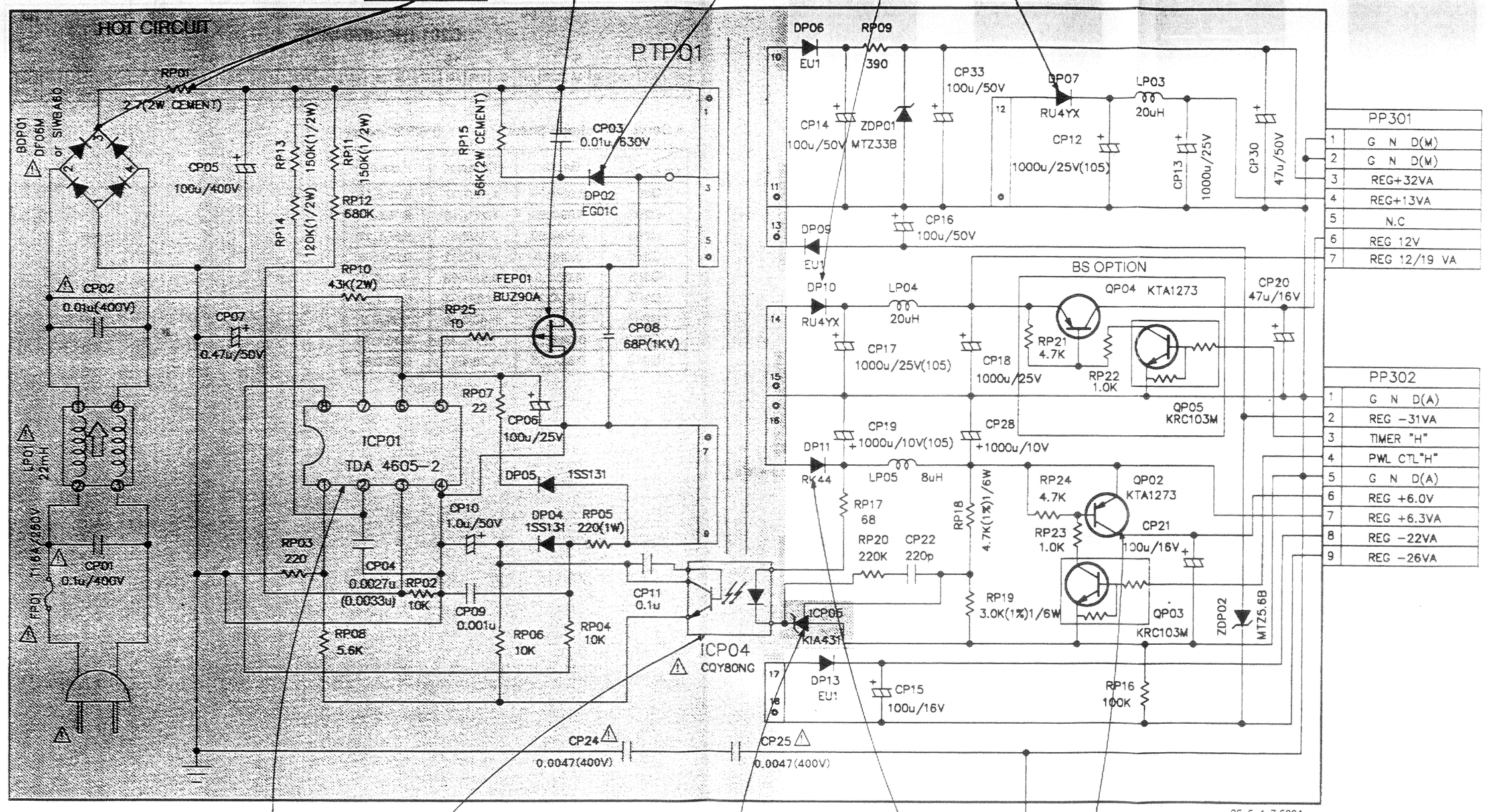
BDP01, RP01 are defective.
(Not Switched.)
No Power.

FEP01 is defective.
No Power.

DP02 is defective.
(FEP01 is defective.)
No Power.

DP10 is defective.
No 12VA Power.

DP07 is defective.
No 13VA Power.



PP301	
1	G N D(M)
2	G N D(M)
3	REG+32VA
4	REG+13VA
5	N.C
6	REG 12V
7	REG 12/19 VA

PP302	
1	G N D(A)
2	REG −31VA
3	TIMER "H"
4	PWL CTL"H"
5	G N D(A)
6	REG +6.0V
7	REG +6.3VA
8	REG −22VA
9	REG −26VA

ICP01 is defective.
(Not Switched.)
No Power.

ICP04 is defective.
No Power.

ICP05 is defective.
No Power.

DP11 is defective.
No 6VA Power.

QP02 is defective.
No 6VA Power.

95. 5. 4. 7-589A

No. \ Model	with BS	without BS
CP04	0.0033μ	0.0027μ

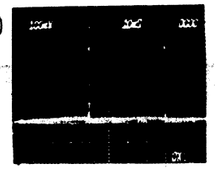
* Servo Waveform

①

IC201 Pin ①
Tracking Trigger
(100mV/10msec)

②

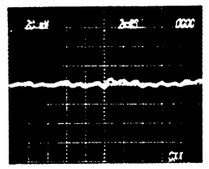
IC201 Pin ⑥
PG Mcnc-Multi
(100mV/2msec)

③ 

IC201 Pin ⑦ PG Input
(100mV/10msec)

④

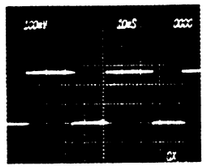
IC201 Pin ⑨ Drum
Frequency Generator
Input (100mV/2msec)

⑤ 

IC201 Pin ㉑ Capstan Control
(20mV/2msec)

⑥

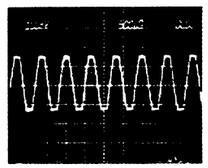
IC201 Pin ㉙
Record Control (-)
(100mV/10msec)

⑦ 

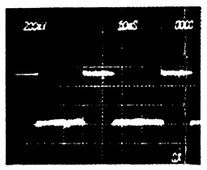
iC201 Pin ㉚
Record Control (+)
(100mV/10msec)

⑧

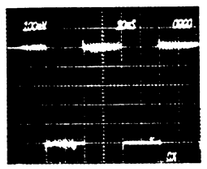
IC201 Pin ㉟
Playback Control Puise
(50mV/10msec)

⑨ 

IC201 Pin ㊲
Capstan Frequency Generator
Input (100mV/500μ sec)

⑩ 

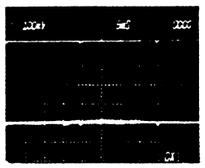
IC201 Pin ㊴ Control Clock
(200mV/10msec)

⑪ 

IC201 Pin ㊺
Video Head Switching
Pulse (100mV/10msec)

⑫

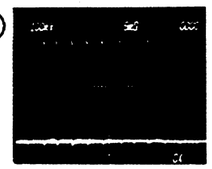
IC201 Pin ㊽ Vertical Pulse (VP)
(100mV/5msec)

⑬ 

IC201 Pin ㊿ C-SYNC
Input terminal
(100mV/5msec)

⑭

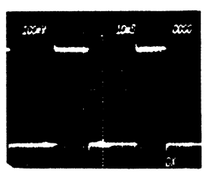
IC201 Pin ㊸
Servo Data Input terminal

⑮ 

IC201 PIN ㊹ Servo Clock Input
terminal (100mV/5msec)

⑯

IC201 Pin ㊺ CFG (Capstan
Frequency Generator) Count
Down Output terminal
(100mV/500μ sec)

⑰ 

IC201 Pin ㊻ Control Count Down
Output terminal.
(100mV/10msec)

• Servo IC Voltage Sheet

PB (REC)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
1.99 (4.97)	2.51 (2.49)	0.88 (0.88)	1.23 (1.29)	3.73 (3.70)	5.01 (4.99)	0.50 (0.46)	0.02 (0.01)	0.05 (0.05)	2.50 (2.50)	2.50 (0.02)	2.50 (2.48)	2.56 (2.57)	2.56 (2.55)	2.54 (2.53)	0.00 (0.0)	5.00 (4.97)	2.00 (3.59)	5.02 (4.99)	2.62 (2.60)	2.51 (2.49)	2.51 (2.49)	2.51 (2.49)	2.51 (2.49)	2.51 (2.49)	0.00 (0.0)	2.51 (2.74)	2.51 (2.10)

55 50 45 40 35 30

IC201 (HD49754NT)

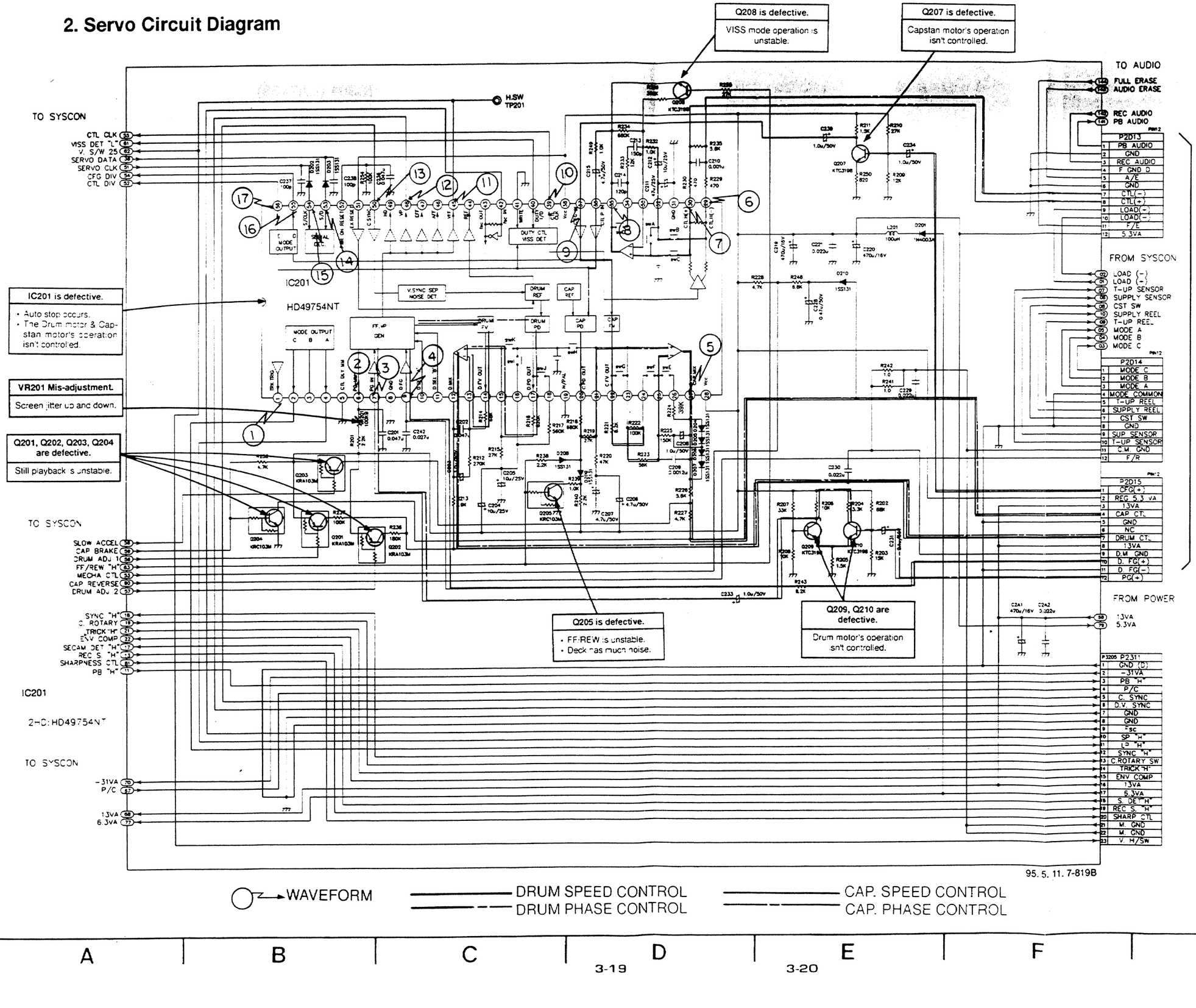
1 5 10 15 20 25

29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
3.61 (3.60)	0.02 (0.02)	0.01 (0.01)	4.99 (4.95)	0.0 (0.0)	0.30 (0.30)	2.11 (2.10)	0.0 (0.0)	2.60 (2.59)	2.61 (2.6)	2.62 (2.6)	1.31 (1.29)	2.51 (2.49)	2.53 (2.51)	2.52 (2.51)	2.52 (2.50)	2.52 (2.53)	2.39 (2.37)	0.0 (0.0)	2.54 (2.52)	2.53 (2.51)	2.54 (2.51)	2.54 (2.51)	2.54 (2.51)	2.52 (2.51)	2.64 (2.60)	2.66 (2.63)	5.03 (4.99)

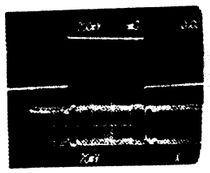
• Servo TR Voltage Sheet (PB/REC mode)

Port / TR No.	Emitter	Collector	Base
Q201	4.99/4.98	1.18/1.17	5.19/5.16
Q202	4.99/4.99	1.17/1.16	5.19/5.16
Q203	4.99/4.99	2.64/2.63	5.20/5.17
Q204	0.00/0.0	2.64/2.63	0.03/0.03
Q205	0.00/0.0	4.99/4.98	0.00/0.0
Q207	0.91/0.91	3.35/3.34	1.51/1.51
Q208	2.49/2.49	2.40/2.40	0.00/0.0
Q209	0.54/0.54	1.27/1.25	1.13/1.13
Q210	0.54/0.55	4.98/4.97	0.88/0.88

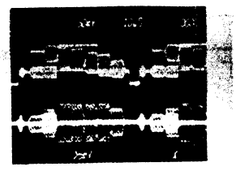
2. Servo Circuit Diagram



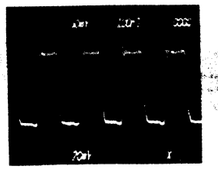
* Y/C Waveform (When taking a photograph of waveform, set probe of oscilloscope to 10:1)

① 

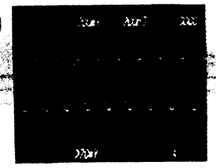
IC301 Pin ①
Playback RF (SP mode)
(20mV/5msec)

② 

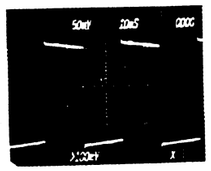
IC301 Pin ㉕
Playback Color
(5mV/10μ sec)

③ 

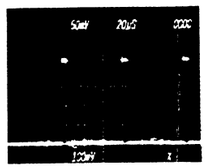
IC301 Pin ㉞
Playback Mode : Fsc
Oscillation (20mV/100nsec)

③ 

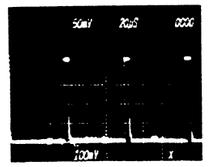
IC301 Pin ㉞
Record Mode:Fsc
Oscillation (20mV/200nsec)

④ 

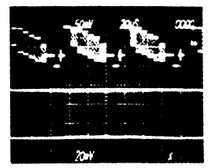
IC303 Pin ⑱
S/W 25 (100mV/10msec)

⑤ 

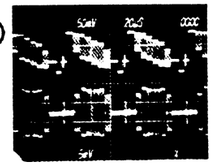
IC301 Pin ⑮ C.SYNC
(100mV/20μ sec)

⑥ 

IC301 Pin ㊵
B.G.P Out terminal
(100mV/20μ sec)

⑦ 

IC301 Pin ②
Record FM signal
(20mV/20μ sec)

⑧ 

IC303 Pin ④
Record Color Signal
(5mV/20μ sec)

* Y/C TR Voltage Sheet (PB/REC mode)

Port / TR No.	Emitter	Collector	Base
Q305	3.45/2.91	0.0/0.0	2.86/2.32
Q309	3.47/0.0	6.0/0.0	4.09/0.0
Q312	0.0/0.0	0.01/6.07	3.62/0.0
Q313	6.12/6.08	6.05/0.0	5.32/6.08
Q314	2.23/2.34	5.18/5.15	2.82/2.93
Q323	0.93/0.0	4.28/0.0	1.54/0.0
Q324	5.46/5.46	12.87/12.89	6.04/6.04
Q325	3.19/0.64	0.0/0.0	2.56/0.0
Q326	0.0/0.0	0.0/0.0	4.77/4.77
Q327	0.0/0.0	0.0/0.0	0.09/0.10
Q3A1	0.0/0.0	4.94/4.91	0.05/0.04
Q3A2	0.0/0.0	0.0/2.30	5.15/0.0
Q3A3	option		

* Y/C IC Voltage Sheet

PB (REC)

0.00 (0.0)	1.60 (1.74)	0.00 (0.01)	2.06 (2.05)	3.36 (2.49)	3.05 (3.02)	3.94 (3.02)	0.00 (0.0)	0.50 (0.49)	5.18 (5.15)	0.00 (0.0)	0.00 (0.0)	0.00 (0.0)	2.03 (2.05)	2.83 (2.96)	4.09 (4.09)	0.20 (0.19)	2.63 (0.02)	0.08 (0.06)	1.96 (1.94)	0.11 (0.1)	2.61 (2.58)	0.00 (0.0)	2.66 (2.64)
		45					40					35						30					25
							IC301 (LA7439)																
1				5					10					15						20			24
3.69 (3.07)	3.77 (3.10)	4.21 (4.20)	2.88 (2.31)	3.12 (2.99)	4.66 (2.26)	4.66 (2.26)	3.25 (3.24)	2.55 (2.53)	1.68 (1.44)	2.09 (2.08)	2.69 (2.68)	3.93 (3.02)	5.16 (5.15)	0.50 (0.47)	3.14 (3.14)	1.79 (1.98)	2.26 (2.28)	2.17 (2.16)	0.05 (0.05)	1.11 (1.14)	2.14 (2.25)	2.61 (2.59)	0.18 (0.17)

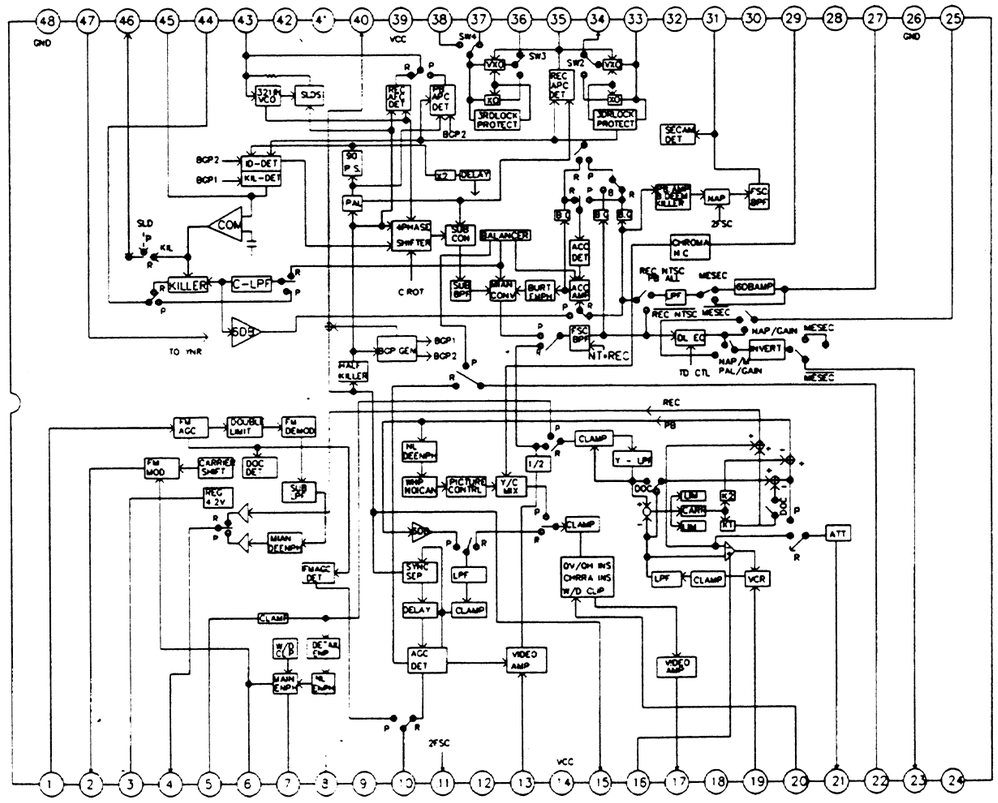
PB (REC)

0.0 (0.0)	1.30 (1.29)	0.0 (0.0)	5.14 (5.10)	8.96 (8.84)	5.24 (5.20)	0.0 (0.0)	5.24 (5.20)	1.97 (2.02)	1.97 (2.02)	0.0 (0.0)
		20					15			
				IC303 (LC89970)						
1				5					10	
0.0 (0.0)	2.33 (2.29)	5.24 (5.20)	2.33 (2.29)	0.0 (0.0)	2.27 (2.31)	0.0 (0.0)	[illegible]	0.0 (0.0)	2.31 (2.29)	1.14 (1.12)

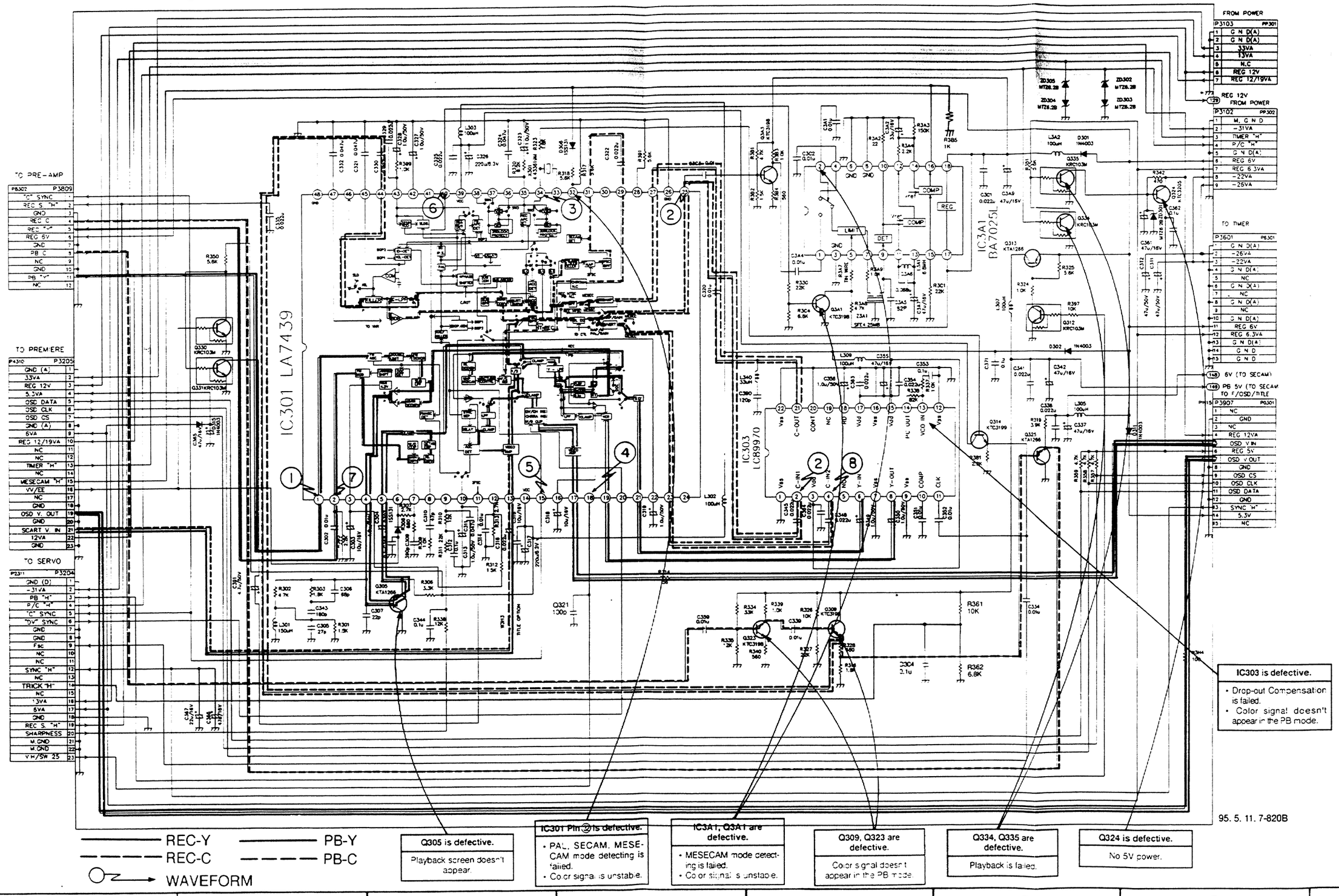
PB (REC)

0.0 (1.27)	4.06 (4.04)	0.0 (0.0)	0.00 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	5.46 (5.42)
			10					
			IC3A1 (BA7025L)					
1		5					15	
4.06 (4.04)	0.0 (0.0)	4.95 (4.91)	4.85 (4.81)	3.27 (3.23)	4.0 (4.25)	4.0 (4.24)	0.0 (0.0)	5.46 (5.42)

* IC301 (LA7439) Block Diagram



3. Y/C Circuit Diagram

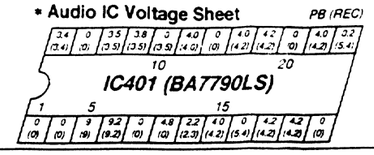


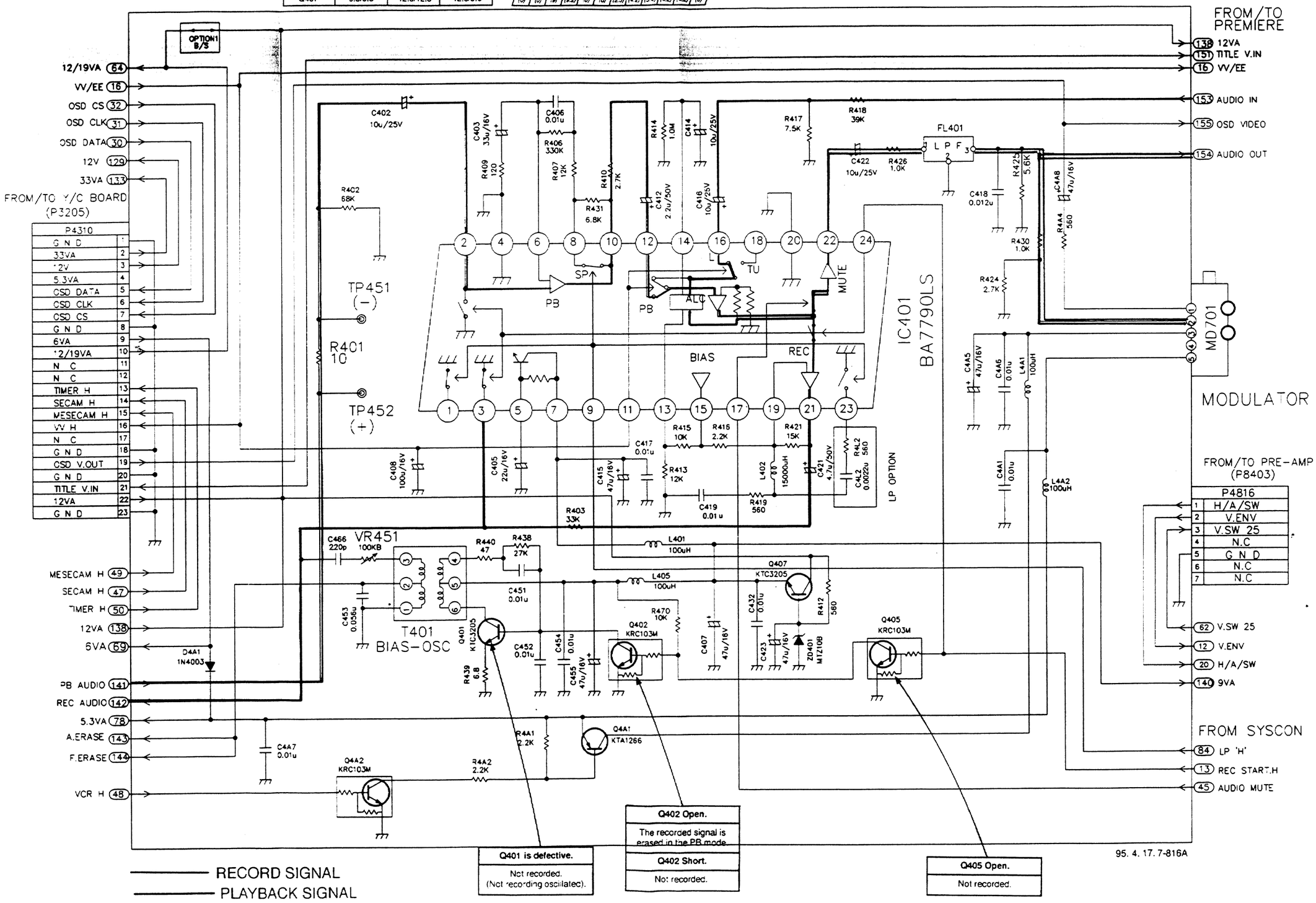
4. Audio Circuit Diagram

• Audio TR Voltage Sheet (PB/REC mode)

Port / TR No.	Emitter	Collector	Base
Q401	0/0.6	9.2/9.0	0/0.5
Q402	0/0	0/0.5	6.3/0
Q405	0/0	6.3/0	0.2/5.3
Q407	9.3/9.3	12.0/12.0	12.0/9.6

* Audio IC Voltage Sheet PB (REC)





6. System Control Circuit Diagram

X501 is defective.
System control is unstable.

X502 is defective.
Clock doesn't operate.

IC503 is defective.
Reset doesn't operate.

Q507 is defective.
Auto tracking is unstable.

Q506 is defective.
Sharpness control is failed.

IC507 is defective.
TV/VCR mode, SCART control are unstable.

R-BF204P OPTION TABLE

Circuit No.	NAME	USING
D5A1	VPS	VPS
D5A2	ACMS	
D5A3	2HEAD	0
D5A4	SP ONLY	0
D5A5	BS	BS SELECT
D5A6	ACSS	ACSS
D5A7	ENGLISH	INITIAL LANGUAGE
D5A8	SECAM	SECAM
D5A9	PREMIERE	DECORDER ON/OFF
D5B1	TEST	TEST
D5B2	DIMER	DIMER
D5B3	PDC	PDC
D5B4	MESECAM	MESECAM
D5B5	SHOWVIEW	SHOWVIEW

IC505 is defective.
Memory of CH is unstable.

Q502, Q503 are defective.
- Auto Stop.
- Tape remain function is failed.

IC504 is defective.
Tape loading or unloading is failed.

IC501 is defective.
VCR operation is all failed.

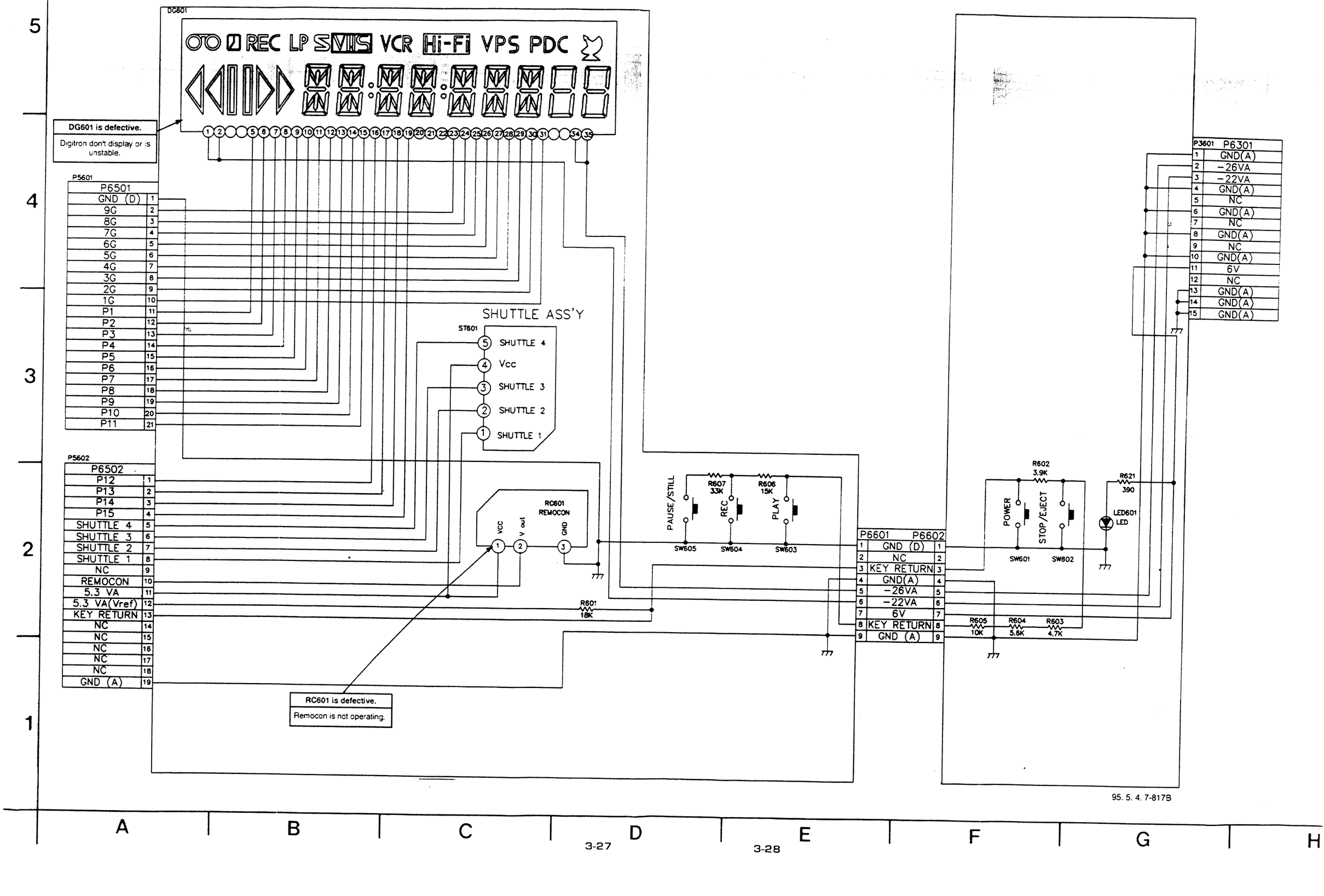
Q501 is defective.
Tape isn't loaded.

Q550, Q551 are defective.
TV control or SCART control is unstable.

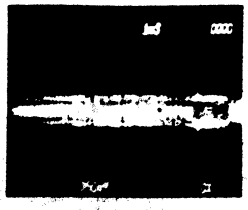
95. 5. 4. 7-818B

3-29 3-30

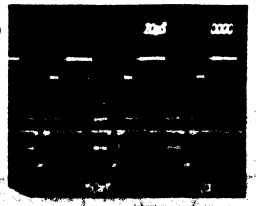
5. Timer Circuit Diagram



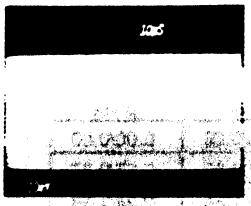
• **Tuner/IF Waveform**

① 

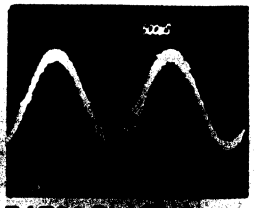
QA07 Base
IF Signal
(50mV/1msec)

② 

PA701 Pin ⑦
Video Out Signal
(50mV/20μsec)

③ 

SIF Signal
(10mV/10μsec)

④ 

PA701 Pin ⑤
Tuner Audio Signal
(50mV/500μsec)

• **Tuner/IF TR Voltage Sheet**

Port / TR No.	Emitter	Collector	Base
Q720	3.49	12.27	4.08
Q721	12.93	6.73	12.28
Q722	6.10	12.95	6.74
Q723	0.01	0.09	0.71
QA01	1.56	5.24	2.20
QA07	2.15	12.77	2.81

• **Tuner/IF IC Voltage Sheet**

REC

4.83	3.27	0.00	2.83	2.83	1.40	1.93	1.95	4.87	2.65
20				15					
ICA01 (TDA9800)									
1				5					10
3.32	3.32	0.75	0.25	3.15	2.64	2.15	3.29	2.15	1.74

REC

4.96	1.31	1.46	2.61	2.58	2.61	0.01
				10		
ICA05 (SDA5649)						
1				5		
0.00	0.18	0.18	0.00	0.37	puise	2.47

REC

0.00	2.37	2.38	0.00	0.23	1.55	1.55	4.91	0.00	3.82	2.68	3.81	3.81	0.00	3.82	3.81	0.00	3.82	3.82	3.84	3.84	3.82	3.77	0.00	7.54	8.46	7.54	3.83	3.82	0.00	3.82	3.82
			60				55				50				45				40				35									
ICA04 (MSP3400)																															
1				5				10				15				20				25				30							
2.25	0.00	0.00	0.01	0.01	0.00	5.19	0.00	0.33	0.33	2.36	2.35	2.32	2.32	2.32	2.26	1.59	4.71	0.00	2.65	4.66	2.35	1.80	5.19	0.07	0.07	0.01	0.07	0.07	0.00	3.82	3.82

• System Control TR Voltage Sheet (PB/REC mode)

Port / TR No.	Emitter	Collector	Base
Q501	0.00/0.00	0.00/0.00	5.21/5.21
Q502	0.00/0.00	pulse	pulse
Q505	0.00/0.00	0.00/0.00	0.00/0.00
Q506	0.00/0.00	2.22/2.22	0.37/0.37
Q507	2.83/1.88	2.82/1.88	2.24/1.29
Q550	0.00/0.00	0.06/0.06	4.36/4.36
Q551	12.90/12.90	12.89/12.89	12.13/12.13

• System Control IC Voltage Sheet

PB (REC)

IC503 (PST523G)

1			
5.26 (5.22)	0.00 (0.0)	5.26 (5.22)	

PB (REC)

IC504 (GL7445)

1					5					10
0.00 (0.16)	0.52 (0.50)	0.77 (0.78)	0.48 (0.72)	1.76 (1.77)	1.77 (1.77)	12.62 12.61	12.62 12.62	0.78 (0.79)	0.52 (0.5)	

PB

IC505 (NM24C16N)

4.95	0.0	0.21	0.13	5
1				
0.0	0.0	0.0	0.0	

PB (REC)

IC507 (TC4094BP)

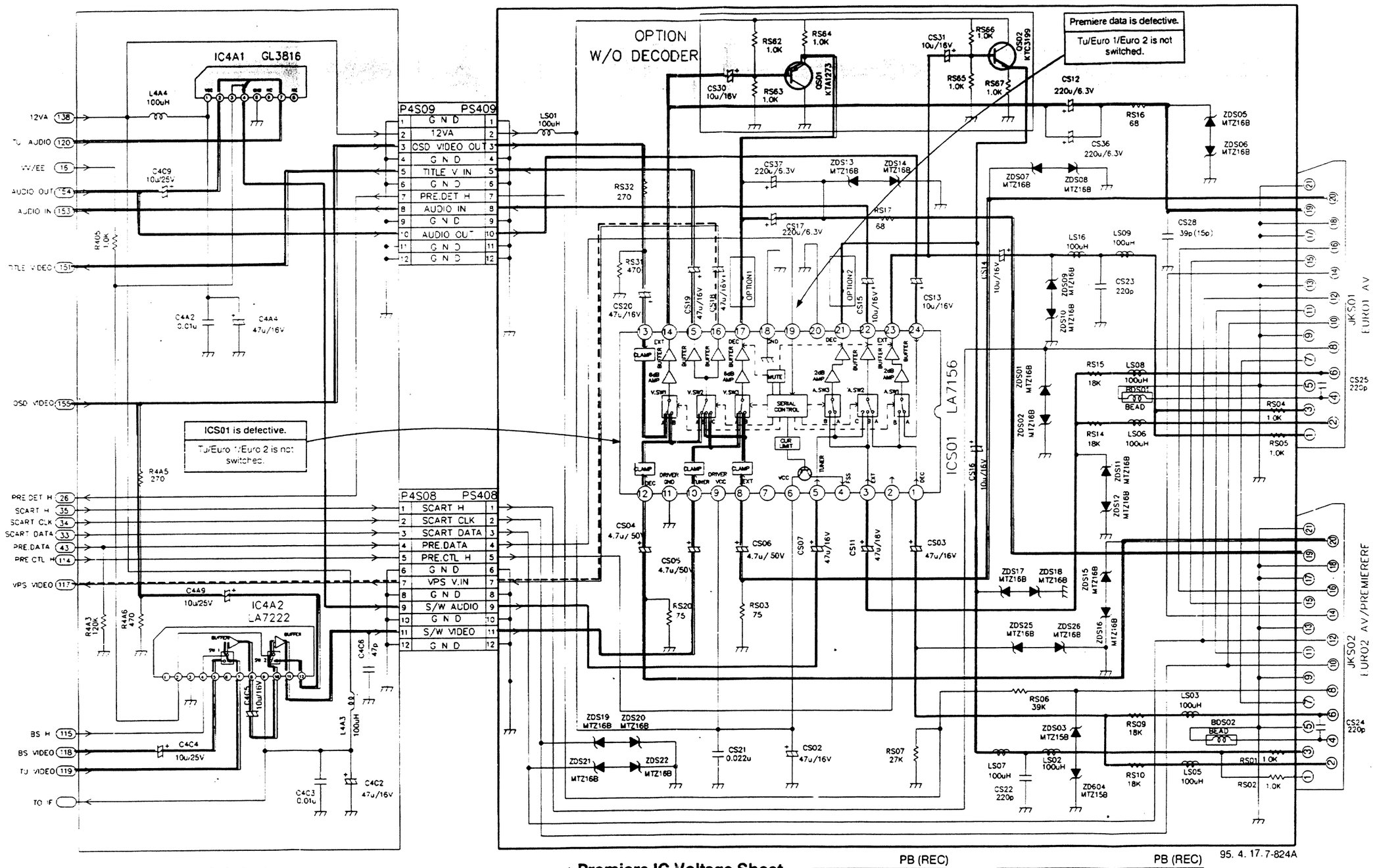
4.95 (4.94)	4.95 (4.94)	4.95 (4.95)	4.89 (4.88)	0.00 (0.0)	0.00 (0.0)	1.17 (2.76)	1.17 (2.73)
15						10	
1				5			
0.00 (0.0)	0.73 (0.83)	0.73 (0.71)	4.87 (4.86)	0.00 (0.0)	0.00 (0.0)	0.00 (0.0)	0.00 (0.0)

PB (REC)

	0.00 (0.0)	0.00 (5.15)	0.00 (0.0)	2.50 (2.51)	4.99 (4.97)	0.00 (0.0)	0.03 (0.03)	5.22 (5.17)	5.22 (5.17)	5.22 (5.17)	0.00 (0.0)	2.53 (2.51)	2.39 (2.37)	2.59 (2.58)	2.36 (2.34)	5.26 (5.22)	2.00 (3.62)	4.96 (4.91)	2.50 (2.50)	pulse (pulse)	
pulse (pulse)	50					45					40					35				30	pulse (pulse)
0.00 (0.0)																					4.99 (0.0)
0.00 (0.0)																					0.02 (0.03)
5.23 (0.0)																					0.06 (0.0)
0.00 (0.00)	55																				5.25 (5.21)
0.00 (0.0)																				25	2.60 (2.63)
-27.6 (-27.6)																					4.09 (4.08)
-27.6 (-27.5)																					4.75 (4.72)
0.00 (-27.5)																					0.05 (0.05)
-27.6 (-27.5)	60																				0.05 (0.05)
-27.6 (-27.5)																				20	0.05 (0.05)
-27.6 (-27.6)																					0.49 (0.14)
-27.6 (-27.6)																					4.52 (4.52)
-27.6 (-27.6)																					0.28 (0.28)
-27.6 (-27.5)	65																				0.00 (0.0)
-24.0 (-13.5)																					0.50 (0.49)
-31.0 (-27.5)																				15	0.50 (0.0)
-31.0 (-27.5)																					0.00 (0.0)
-31.0 (-27.5)																					0.00 (0.0)
-31.0 (-20.4)	70																				0.12 (0.12)
-24.0 (-13.5)																					0.33 (0.34)
-17.1 (-24.0)																				10	5.45 (5.42)
-17.1 (-17.1)																					5.42 (5.39)
-31.0 (-17.0)																					4.00 (0.0)
-31.0 (-24.0)	75																				0.70 (0.0)
-31.0 (-31.0)																					0.00 (0.0)
-31.0 (-31.0)																				5	0.13 (0.17)
-31.0 (-31.0)																					0.17 (0.17)
-31.0 (-20.5)																					0.34 (0.0)
-20.5 (-23.9)	80					85					90					95				100 1	4.99 (4.99)
	-0.00 (0.0)	-0.00 (0.0)	0.00 (0.0)	0.00 (0.0)	5.25 (5.20)	5.25 (5.20)	5.25 (5.20)	0.36 (0.0)	-31.0 (-31.0)	0.50 (0.5)	5.27 (5.22)	2.15 (0.0)	-0.00 (0.0)	5.54 (5.52)	5.53 (5.21)	1.97 (4.97)	0.00 (0.00)	2.96 (1.87)	2.41 (1.27)	0.00 (0.0)	

IC501 (M38185M8)

8. Premiere Circuit Diagram



VIDEO SIGNAL
VPS VIDEO SIGNAL
AUDIO SIGNAL

* Premiere IC Voltage Sheet

PB (REC)

IC4A1 (GL3816)

1					5			
11.8 (11.8)	9.0 (7.8)	5.6 (0)	7.0 (7.0)	0 (0)	0 (0)	7.9 (7.8)	0 (0)	

PB (REC)

IC4A2 (LA7222)

1				5					10		
0 (0)	5.6 (0)	0 (0)	0 (0)	8 (7.8)	0 (0)	7.8 (7.8)	7.6 (7.0)	12 (11.8)	7.8 (7.8)	7.0 (7.0)	7.8 (7.8)

7. Tuner/IF Circuit Diagram

VR701 Mis-adjustment.
Picture is abnormal. (unclear)

QA01 is defective.
Video signal doesn't appear on the TV.

TA01 Mis-adjustment.
- Tuning is failed.
- AFC is failed.

QA07 is defective.
V dec signal doesn't appear on the TV.

TU701

ICA01
TDA9800

ZA01
OFWG1962

ICA05
SDA5649

ICA04
MSP3400

FROM MAIN

15	AGC ADJ	15
14	RF AGC	14
13	G.N.D(A)	13
12	IF	12
11	G.N.D(A)	11
10	12V(G)	10
9	VPS VIDEO IN	9
8	G.N.D(A)	8
7	TUNER V-OUT	7
6	G.N.D(A)	6
5	TU A-OUT	5
4	G.N.D(A)	4
3	G.N.D	3
2	SECAM-L "H"	2
1	G.N.D	1

P7A05 PA701

P8701 P7801

1	BS AFC "H"	1
2	BS AFC "L"	2
3	G.N.D	3
4	DATA2 (BS)	4
5	CLK2 (BS)	5
6	BS ENABLE	6
7	G.N.D	7
8	TIMER "H"	8
9	G.N.D	9
10	G.N.D	10
11	G.N.D	11
12	EXP3 ENABLE	12

P8702 P7802

1	G.N.D	1
2	BS VIDEO	2
3	BS "H"	3
4	6.3VA	4
5	3.3VA	5
6	12V(G)	6
7	12/19VA	7
8	12VA	8
9	BS SIF	9
10	G.N.D	10

AUDIO SIGNAL
VPS VIDEO SIGNAL
BS SIF SIGNAL
VIDEO SIGNAL
BS VIDEO SIGNAL
SIF SIGNAL
IF SIGNAL
WAVEFORM

95. 5. 4. 7-825C

9. Pre-Amp Circuit Diagram

• Pre-Amp TR Voltage Sheet

(PB/REC mode)

TR No. \ Port	Emitter	Collector	Base
Q802	2.72/2.70	5.35/5.31	3.35/3.33
Q803	0.85/0.84	3.35/3.33	1.49/1.48
Q804	2.00/1.98	3.37/3.35	2.66/2.64
Q806	2.04/2.02	5.38/5.33	2.67/2.64
Q807	0.00/0.00	0/5.2	0/5.0

• Pre-Amp IC Voltage Sheet

PB (REC)

0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (4.29)	0.75 (3.09)	2.11 (3.81)	0.01 (4.30)	0.70 (0.10)	2.08 (3.82)	5.33 (5.18)	0.01 (4.27)	0.12 (1.58)

20 15

IC801 (LA7410)

1 5 10

0.0 (0.0)	0.0 (2.7)	0.26 (0.18)	0.27 (5.10)	3.58 (1.21)	0.0 (0.0)	2.41 (3.54)	0.0 (3.86)	0.03 (1.57)	2.69 (2.61)	5.23 (4.52)	5.35 (5.18)

Q804, Q803, Q802 are defective.
- RF level is low in the PB mode.
- The screen has much noise in the PB mode.
- The playback doesn't operate and has the noise.

Q806 is defective.
REC FM is low in the REC moce.

TO AUDIO

PIN7	
P8403	
NC	1
VIDEO ENV	2
V.SW25	3
NC	4
NC	5
NC	6
NC	7

TO Y/C

PIN12

P8302	P3809
1	C SYNC
2	REC S. "H"
3	GND
4	REC C
5	REC Y
6	REG 6V
7	GND
8	PB C
9	NC
10	GND (A)
11	PB Y
12	NC

TO DRUM

P8D01	
SP A PLAY	1
SP A REC	2
G N D	3
SP B REC	4
SP B PLAY	5

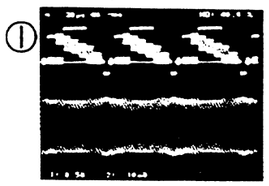
IC801 LA7410

EP/SP: EP (LP) / SP (1.5)

SW25 REC MUTE: H. CH / L. CH (1.0) — ON / OFF (3.2)

REC/PB: REC / PB (2.0)

• Pre-Amp Waveform

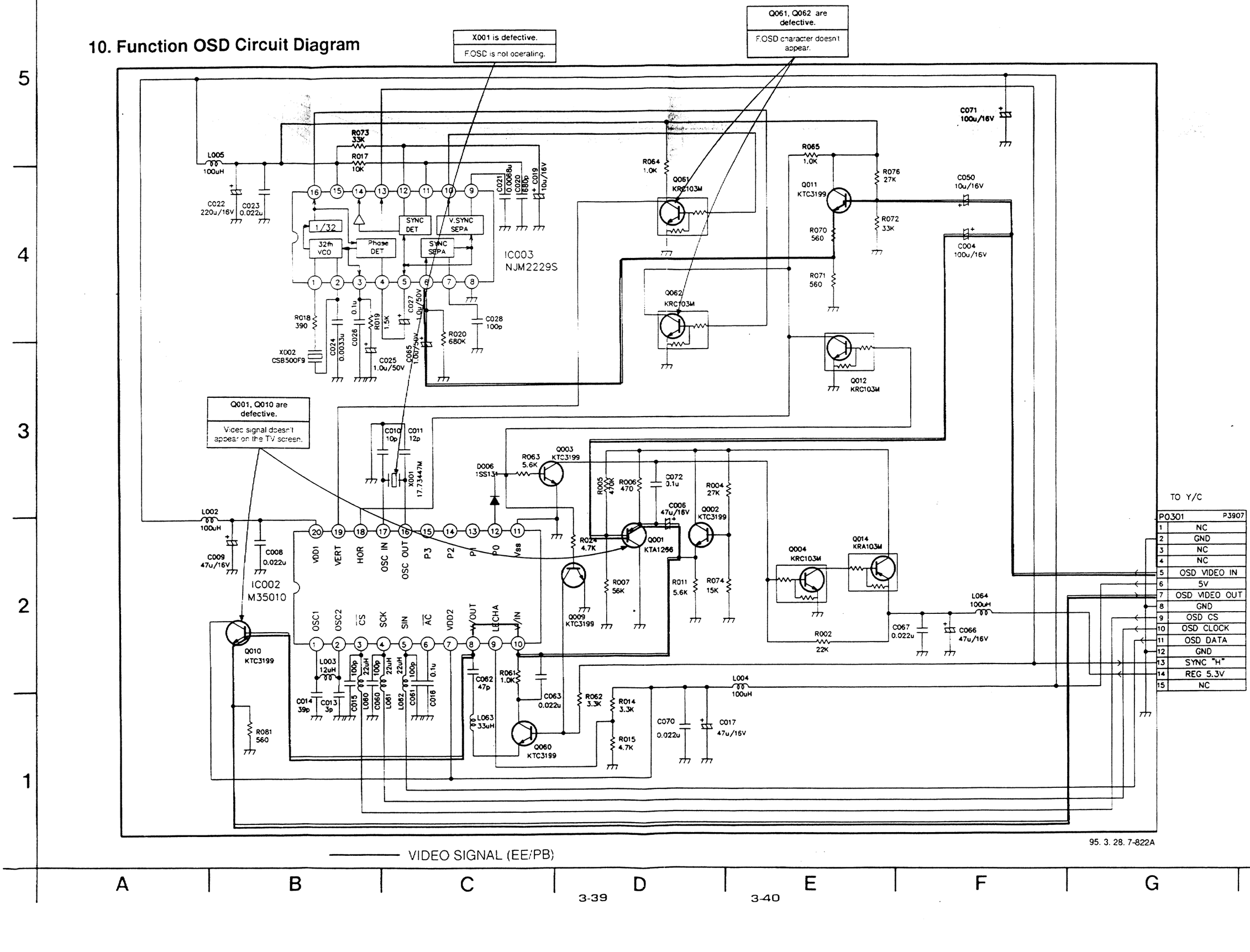


IC801 Pin ⑧
REC Y FM

95. 5. 11. 7-823B

REC-Y
REC-C
PB-Y
PB-C
WAVEFORM

10. Function OSD Circuit Diagram



• **Function OSD TR Voltage Sheet** (PB/REC mode)

Port / TR No.	Emitter	Collector	Base
Q001	2.34/2.34	0.0/0.0	1.67/1.67
Q002	2.28/2.28	5.24/5.24	1.84/1.84
Q003	0.0/0.0	2.81/2.81	0.0/0.0
Q004	0.0/0.0	0.0/0.0	2.82/2.82
Q009	0.0/0.0	3.35/3.35	0.0/0.0
Q010	1.67/1.67	5.44/5.44	2.28/2.28
Q011	2.28/2.28	5.40/5.40	2.90/2.90
Q012	0.0/0.0	4.90/4.90	0.0/0.0
Q014	5.36/5.36	5.23/5.23	0.0/0.0
Q060	2.69/2.69	2.69/2.69	3.35/3.35
Q061	0.0/0.0	5.18/5.18	0.17/0.17
Q062	0.0/0.0	4.90/4.90	0.33/0.33

* **Function OSD IC Voltage Sheet**

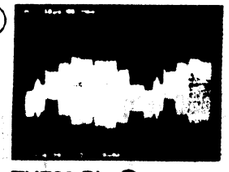
PB

5.43	5.18	4.89	2.47	2.47	0.00	0.00	0.00	0.00	0.00
20				15					
IC002 (M35010)									
1				5					10
2.53	2.55	3.99	5.38	5.41	5.39	5.42	2.27	3.42	2.27

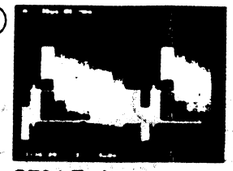
PB

0.33	5.40	0.0	4.71	1.89	0.61	0.17	0.19
15						10	
IC003 (NJM2229S)							
1				5			
2.96	2.28	2.44	0.00	4.31	2.99	2.33	0.00

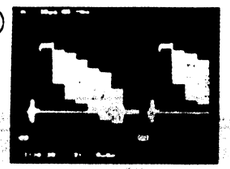
• **BS Waveform**

① 

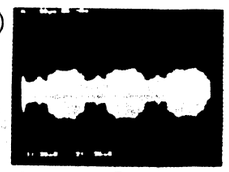
TU702 Pin ⑦
Base Band Signal
(0.2V/10μsec)

② 

Q704 Emitter
Dispersual Video Signal
(0.2V/10μsec)

③ 

C707 (+)
VIDEO Signal
(0.2V/10μsec)

④ 

IC701 Pin ⑱
SIF Signal
(20mV/20μsec)

• **BS TR Voltage Sheet**

Port / TR No.	Emitter	Collector	Base
Q701	9.75	2.85	9.12
Q702	3.42	12.14	3.98
Q703	12.77	6.52	12.14
Q704	5.90	12.78	6.52
Q705	18.61	18.60	17.90
Q706	0.00	0.07	4.93
Q707	18.62	18.60	17.92
Q708	0.00	0.10	3.97
Q709	13.11	18.56	14.35
Q710	13.09	12.89	12.34
Q711	0.00	0.06	4.75
Q712	5.01	4.91	4.29
Q713	0.00	0.04	4.74
Q714	0.00	0.02	4.75
Q715	18.59	18.58	17.88
Q716	0.0	0.09	4.93
Q717	18.58	18.58	17.89
Q718	18.58	17.89	18.53
Q719	0.00	3.97	0.02

* **BS IC Voltage Sheet**

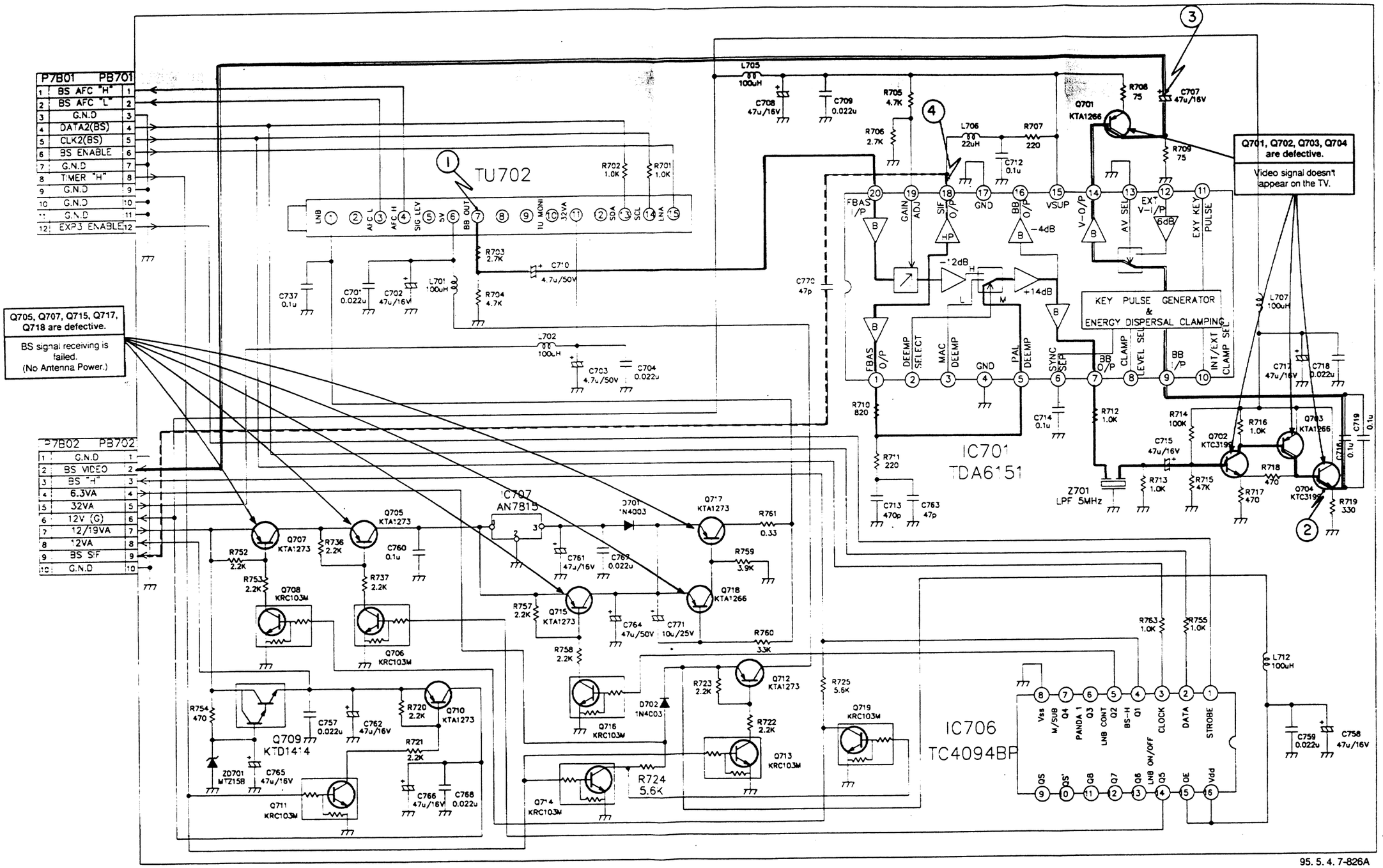
3.49	4.64	12.56	0.02	9.39	12.70	9.25	0.00	1.23	3.16
20				15					
IC701 (TDA6151)									
1				5					10
4.19	2.87	4.18	0.01	4.19	2.39	4.07	3.14	2.58	3.16

5.04	5.04	4.95	0.01	0.01	0.00	2.36	2.36
15						10	
IC706 (TC4094BP)							
1				5			
0.12	0.72	0.73	4.95	4.95	5.03	5.03	0.00

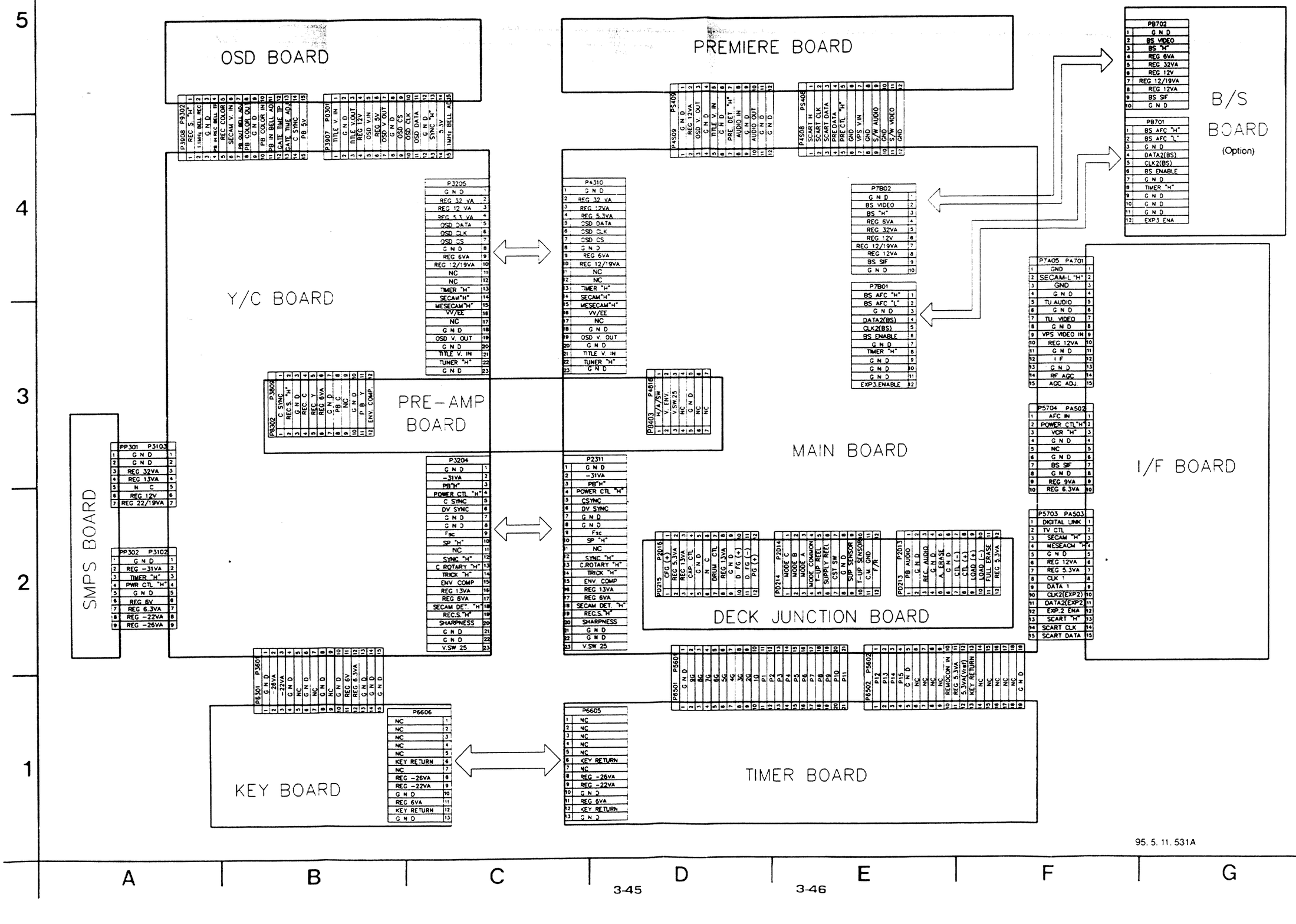
IC707 (AN7815)

1		
18.47	0	15.22

11. BS Circuit Diagram

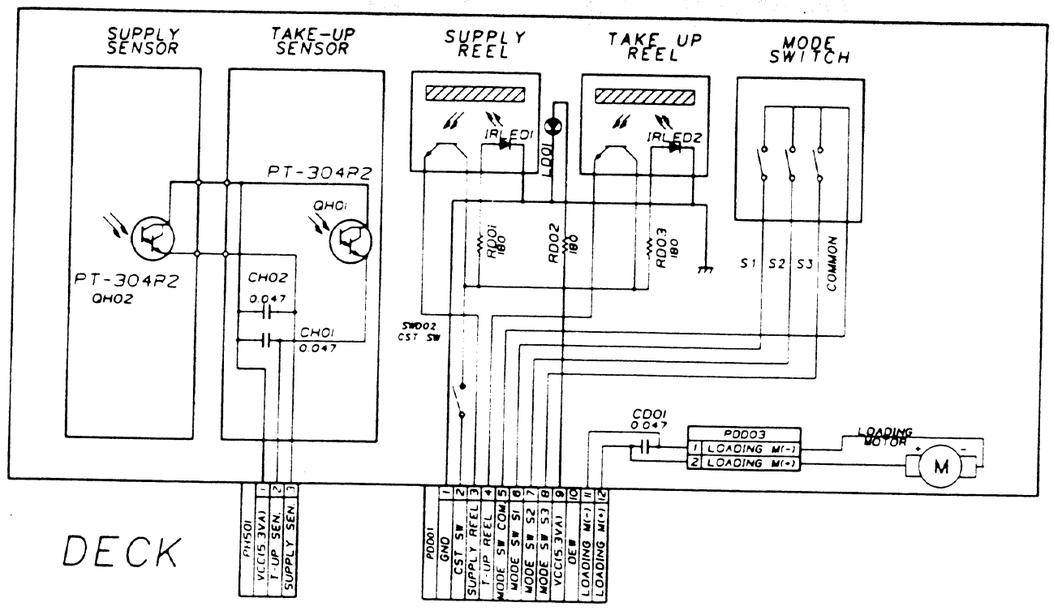


12. Connection Diagram



DECK JUNCTION

1. Deck Junction Circuit Diagram



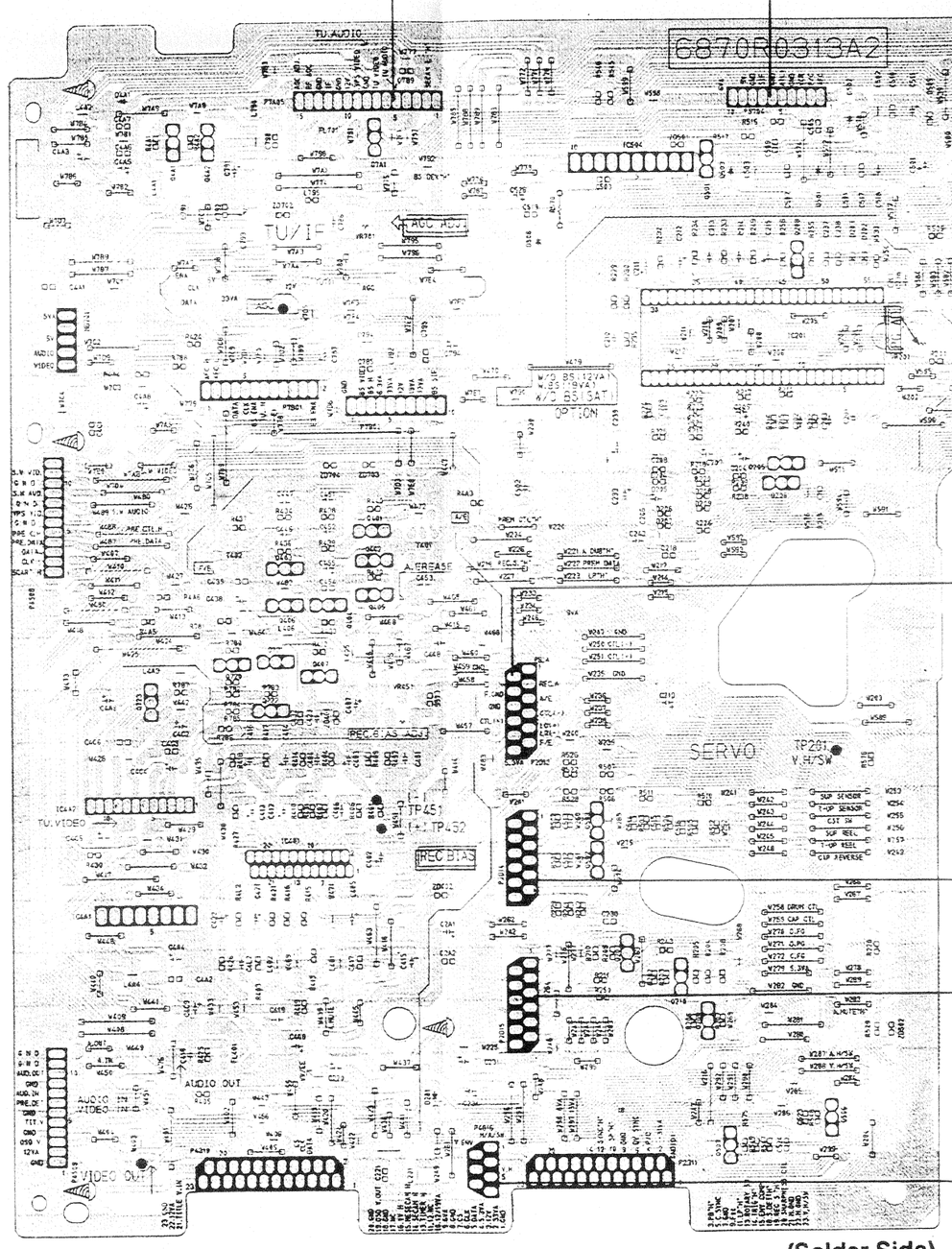
2. Deck Junction P.C.Board

(Solder Side)

MEMO

PRINTED CIRCUIT BOARD DIAGRAMS

1. Main 1 P.C.Board



FROM/TO IF

P7A05-PA701	
1	GND
2	SECAM-L "H"
3	GND
4	GND
5	TU.AUDIO
6	GND
7	TU.VIDEO
8	GND
9	VPS VIDEO IN
10	REG 12VA
11	GND
12	IF
13	GND
14	RF AGC
15	AGC ADJ.

P5704-PA502	
1	AFC IN
2	POWER CTL "H"
3	VCR "H"
4	GND
5	NC
6	GND
7	BS SIF
8	GND
9	REG 9VA
10	REG 5.3VA

P5703-PA503	
1	DIGITAL LINK
2	TV CTL
3	SECAM "H"
4	MESECAM "H"
5	GND
6	REG 12VA
7	REG 5.3VA
8	CLK 1
9	DATA 1
10	CLK 2 (EXP2)
11	DATA 2 (EXP2)
12	EXP 2 ENA
13	SCART "H"
14	SCART CLK
15	SCART DATA

FROM/TO DECK

P2D13	
1	PB AUDIO
2	GND
3	REC AUDIO
4	GND
5	A.ERASE
6	GND
7	CTL (-)
8	CTL (+)
9	LOAD (+)
10	LOAD (-)
11	FULL ERASE
12	REG 5.3VA

P2D14	
1	MODE C
2	MODE B
3	MODE A
4	MODE COMMUON
5	T-UP REEL
6	SUPPLY REEL
7	CST SW
8	GND
9	SUP SENSOR
10	T-UP SENSOR
11	C.M.GND
12	F/R

P2D15	
1	CFG (+)
2	REG 5.3VA
3	REG 13VA
4	CAP CTL
5	GND
6	NC
7	DRUM CTL
8	REG 13VA
9	GND
10	D.FG (+)
11	D.FG (-)
12	PG (+)

FROM/TO TIMER

P5602-P6502	
1	P12
2	P13
3	P14
4	P15
5	GND
6	NC
7	NC
8	NC
9	NC
10	REMOCON IN
11	REG 5.3VA
12	5.3VA (Vref)
13	KEY RETURN
14	NC
15	NC
16	NC
17	NC
18	NC
19	GND

P5601-P6501	
1	GND
2	9G
3	8G
4	7G
5	6G
6	5G
7	4G
8	3G
9	2G
10	1G
11	P1
12	P2
13	P3
14	P4
15	P5
16	P6
17	P7
18	P8
19	P9
20	P10
21	P11

FROM/TO PRE-AMP

P4816-P6403	
1	H/A/SW
2	V.ENV.
3	V.SW 25
4	NC
5	GND
6	NC
7	NC

NOTE)
- ⚠ : SAFETY PARTS
- ● : MEASUREMENT POINT
- □ : ADJUSTMENT POINT
- Emitter : TRANSISTOR Collector Base

LOCA NO.	Posi-tion
IC201	4C
IC401	2B
IC4A1	2A
IC4A2	2A
IC501	4E
IC503	4D
IC504	5C
Q201	4D
Q202	4D
Q203	4D
Q204	4D
Q205	3C
Q206	3C
Q207	2C
Q208	4C
Q209	1C
Q210	2C
Q401	3B
Q402	3B
Q403	3B
Q404	3B
Q405	3B
Q406	3B
Q407	3B
Q4A1	5A
Q4A2	5A
Q501	5C
Q502	2C
Q503	2C
Q506	1C
Q507	1C
Q720	3A
Q721	3A
Q722	3A
Q723	3A
Q7A1	5B

ABBREVIATIONS

ADJ : ADJUSTMENT
AFC : AUTOMATIC FREQUENCY CONTROL
AGC : AUTOMATIC GAIN CONTROL
AUD : AUDIO
CAR : CARRIER
COL : COLOR
DEV : DEVIATION
EE : Electric to Electric
ENV : ENVELOP
FRE : FREQUENCY
LEV : LEVEL
LUM : LUMINANCE
OSC : OSCILLATION
PB : PLAYBACK
PG : PULSE GENERATOR
REC : RECORDING
SIF : SOUND INTERMEDIATE FREQUENCY
VOL : VOLTAGE

2. Y/C P.C.Board

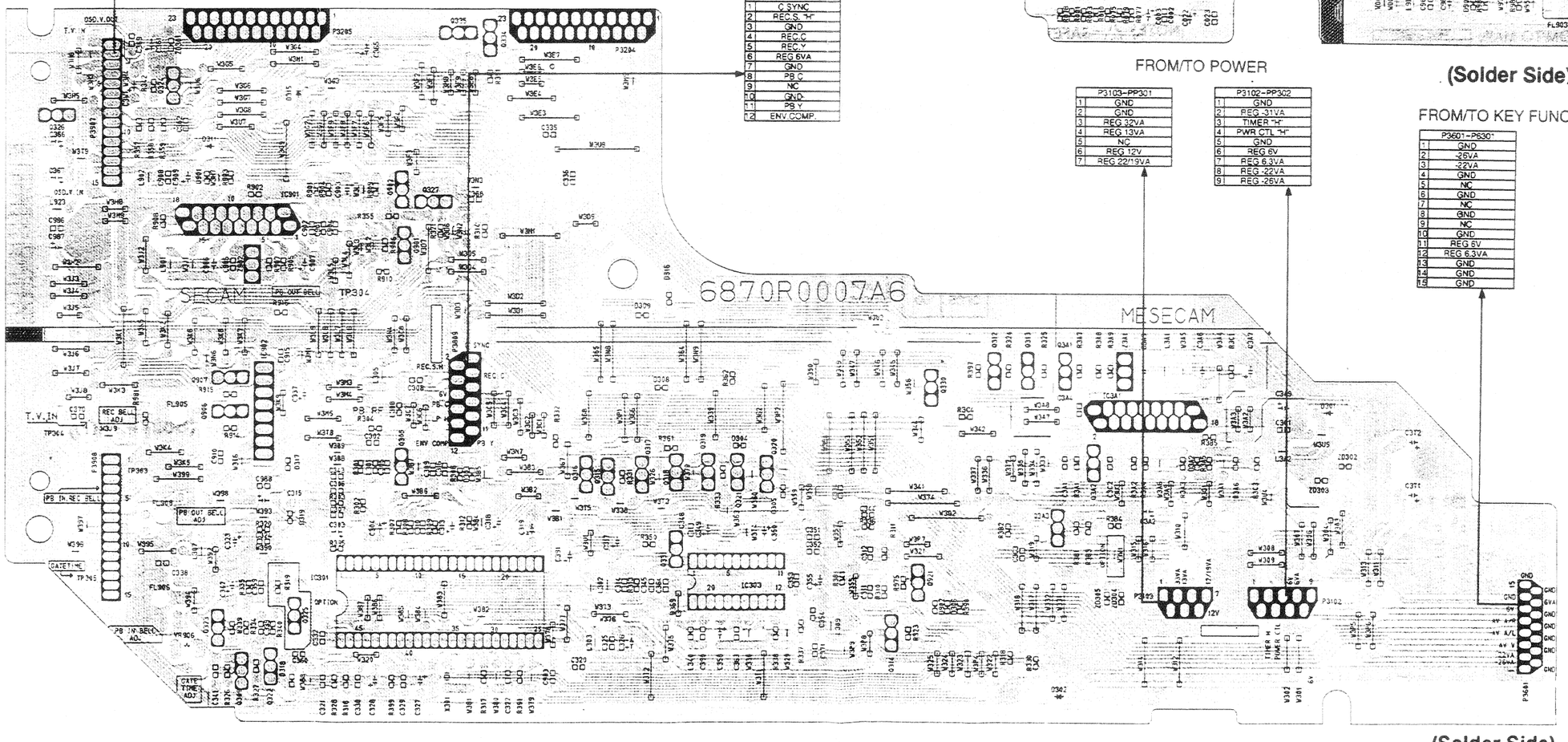
FROM/TO F.OSD

P3907-P0301	
1	TITLE V.IN
2	GND
3	TITLE V.OUT
4	REG 12V
5	OSD V.IN
6	REG 5V
7	OSD V.OUT
8	GND
9	OSD CS
10	OSD CLK
11	OSD DATA
12	GND
13	SYNC "H"
14	3.3V
15	1.1MHz BELL ADJ.

NOTE) ● : MEASUREMENT POINT
□ : ADJUSTMENT POINT
Emitter : TRANSISTOR
Collector
Base

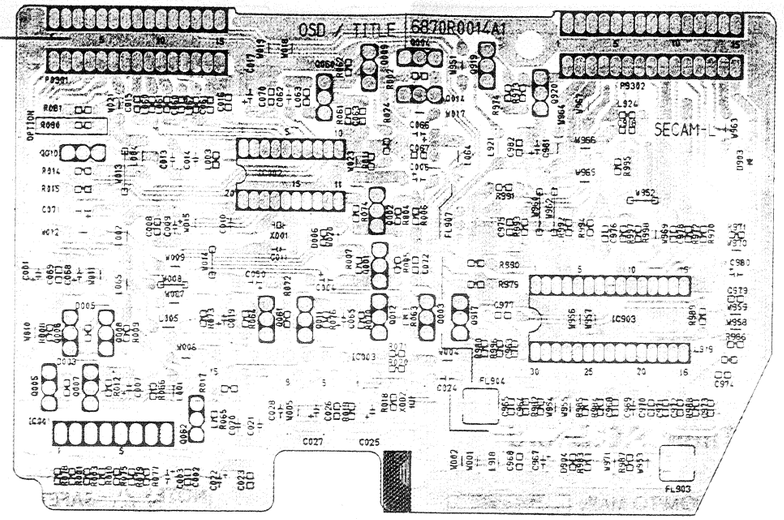
FROM/TO PRE-AMP

P3809-P8302	
1	C SYNC
2	REG.5 "H"
3	GND
4	REG.C
5	REG.Y
6	REG.6VA
7	GND
8	PB C
9	NC
10	GND
11	PB Y
12	ENV.COMP.



(Solder Side)

3. Function OSD P.C.Board



FROM/TO POWER

P3103-PP301	
1	GND
2	GND
3	REG.32VA
4	REG.13VA
5	NC
6	REG.12V
7	REG.22/19VA

P3102-PP302	
1	GND
2	REG.-31VA
3	TIMER "H"
4	PWR.CTL "H"
5	GND
6	REG.6V
7	REG.6.3VA
8	REG.-22VA
9	REG.-25VA

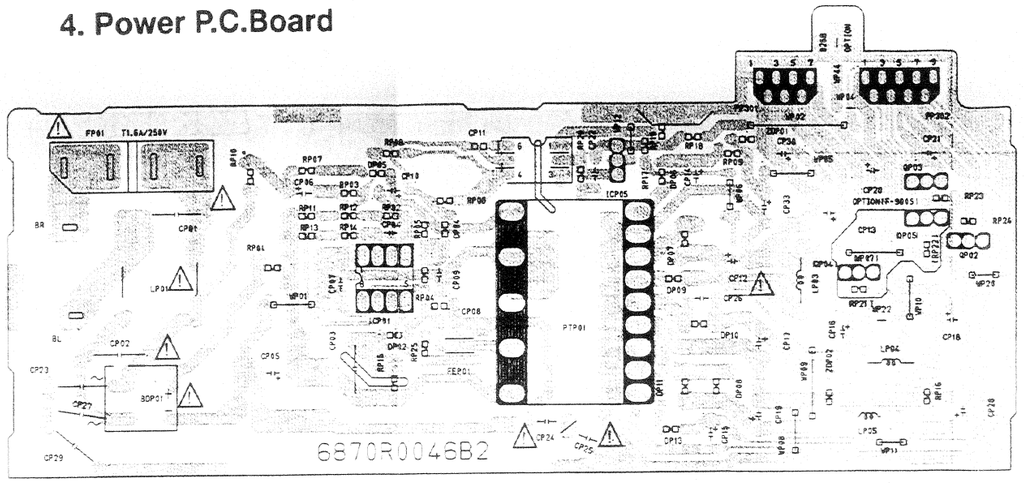
FROM/TO KEY FUNCTION

P3601-P630*	
1	GND
2	-26VA
3	-22VA
4	GND
5	NC
6	GND
7	NC
8	GND
9	NC
10	GND
11	REG.6V
12	REG.6.3VA
13	GND
14	GND
15	GND

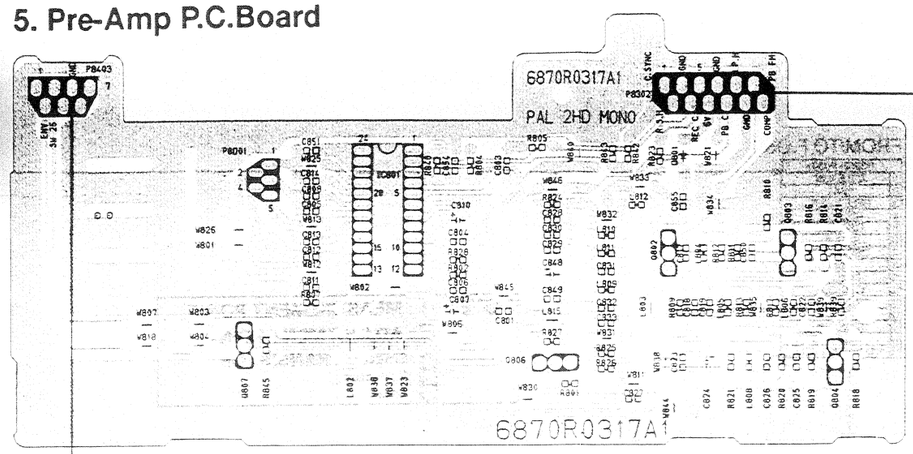
LOCA NO.	Posi-tion
IC3A1	2E
IC301	1B
IC303	1D
IC901	3B
IC902	2B
Q305	2B
Q309	1B
Q312	2E
Q313	2E
Q314	1D
Q315	2C
Q316	2C
Q317	2C
Q318	2C
Q319	2C
Q320	2D
Q321	2D
Q322	1B
Q323	1A
Q324	3A
Q325	1B
Q326	3A
Q327	3B
Q330	2D
Q331	1C
Q334	3C
Q335	4B
Q901	3B
Q902	3B
Q906	2A
Q907	2A
Q921	1D
Q3A1	2E
Q3A3	2E
Q3A2	2E
IC001	5E
IC002	5F
IC903	4G
Q062	4E
Q001	4F
Q002	4F
Q003	4F
Q004	5F
Q005	4E
Q006	4E
Q007	4E
Q008	4E
Q009	5F
Q010	5E
Q011	4F
Q012	4F
Q014	5F
Q060	5F
Q061	4F
Q917	4F
Q919	5F
Q920	5G

(Solder Side)

4. Power P.C.Board



5. Pre-Amp P.C.Board



FROM/TO Y/C

P8302-P3809	
1	C.SYNC
2	REC.S "H"
3	GND
4	REC.C
5	REC.Y
6	REG.6VA
7	GND
8	PB.C
9	NC
10	GND
11	PB.Y
12	ENV.COMP

(Solder Side)

FROM/TO MAIN

P8403-P4816	
1	H/A/SW
2	V.ENV
3	V.SW.25
4	NC
5	GND
6	NC
7	NC

6. Timer P.C.Board

(Solder Side)

FROM/TO MAIN

P6502-P5602	
1	P12
2	P13
3	P14
4	P15
5	GND
6	NC
7	NC
8	NC
9	NC
10	REMOCON IN
11	REG 5.3VA
12	5.3VA (Vref)
13	KEY RETURN
14	NC
15	NC
16	NC
17	NC
18	NC
19	GND

P6501-P5601	
1	GND
2	9G
3	8G
4	7G
5	6G
6	5G
7	4G
8	3G
9	2G
10	1G
11	P-
12	P2
13	P3
14	P4
15	P5
16	P6
17	P7
18	P8
19	P9
20	P10
21	P11

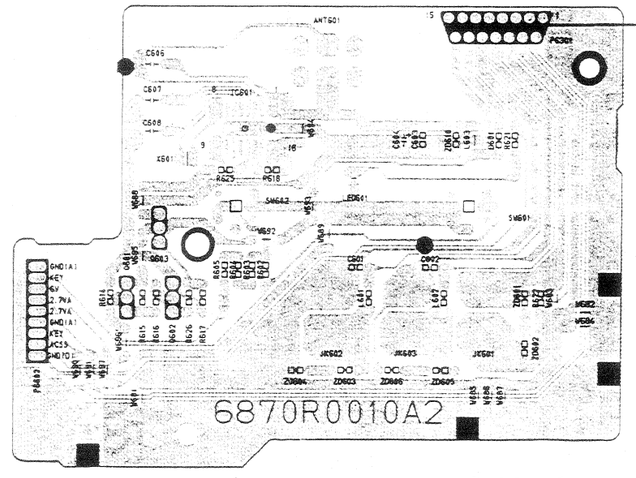
NOTE) ⚠ : **SAFETY PARTS**

Emitter : TRANSISTOR
Collector
Base

LOCA NO.	Position
ICP01	4B
ICP05	5C
QP02	5D
QP03	5D
QP04	4C
QP05	5D

LOCA NO.	Position
IC801	4F
IC802	4E
Q802	5F
Q803	5G
Q804	4G
Q805	5G
Q806	4F

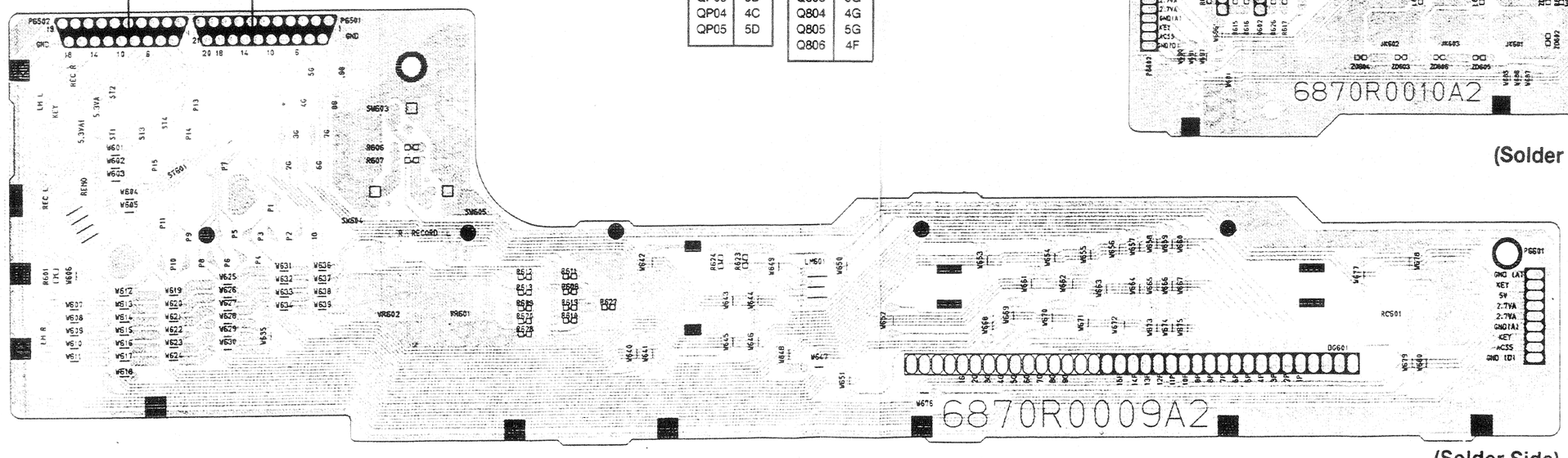
7. Key Function P.C.Board



FROM/TO Y/C

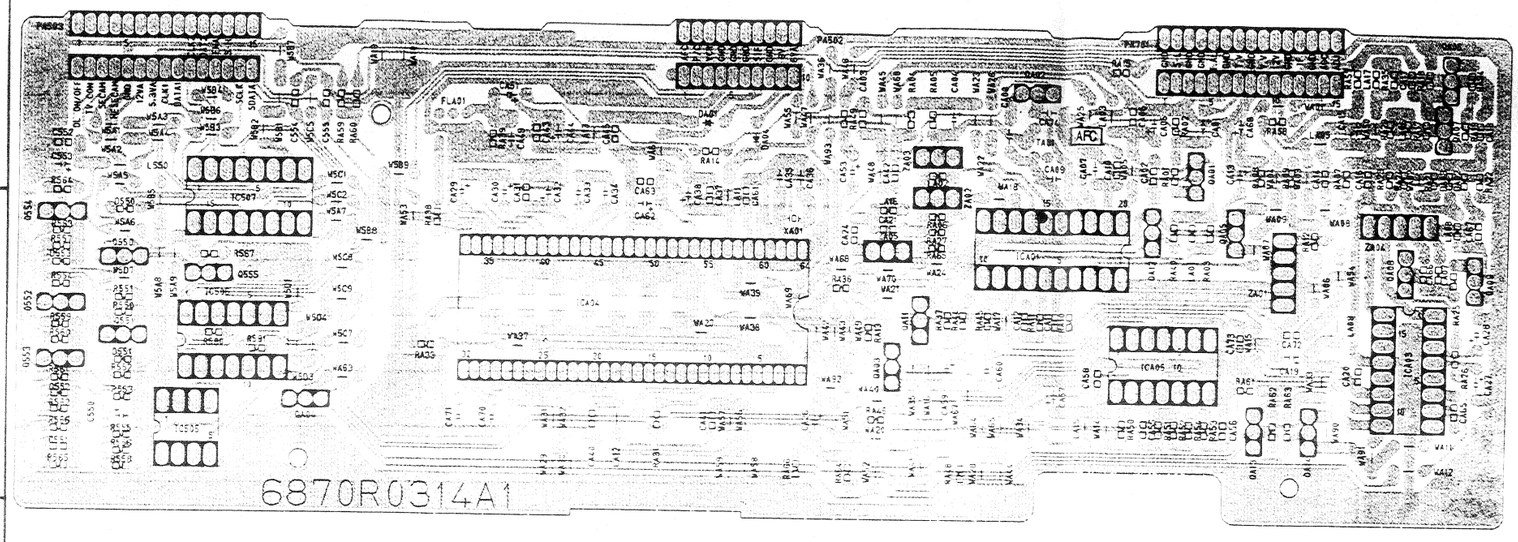
P630*-P3601	
1	GND
2	-26VA
3	-22VA
4	GND
5	NC
6	GND
7	NC
8	GND
9	NC
10	GND
11	REG.6V
12	REG.6.3VA
13	GND
14	GND
15	GND

(Solder Side)



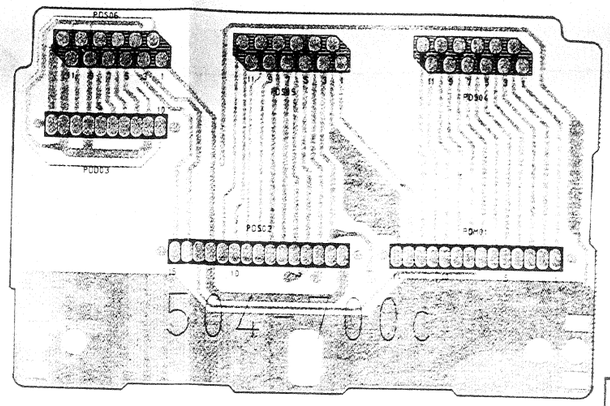
(Solder Side)

8. IF P.C.Board



(Solder Side)

9. Junction P.C.Board

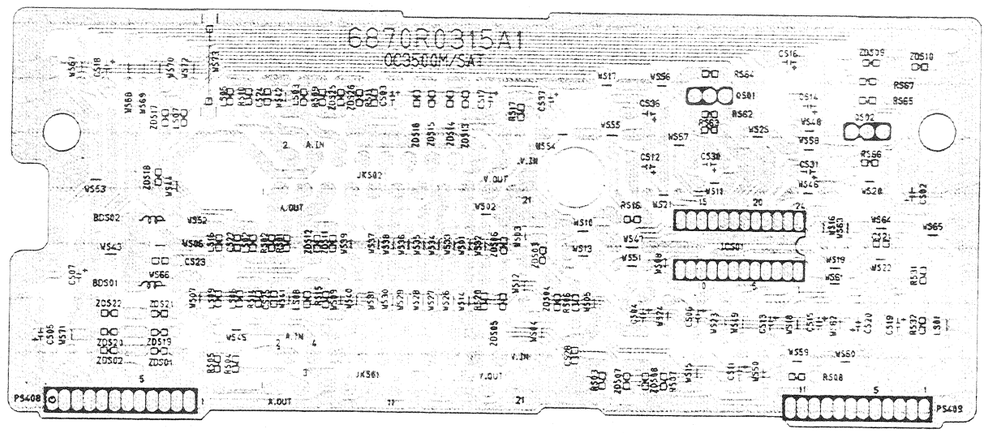


(Solder Side)

LOCA NO.	Position
IC505	4A
IC506	4A
IC507	4A
ICA01	4D
ICA03	4E
ICA04	4B
ICA05	4D
Q550	4A
Q551	4A
Q552	4A
Q553	4A
Q554	4A
Q555	4A
QA01	5D
QA02	5D
QA03	4C
QA04	4B
QA05	4D
QA06	5E
QA07	5E
QA08	4E
QA09	4E
QA11	4C
QA12	4D
QA13	4E
QA14	4E

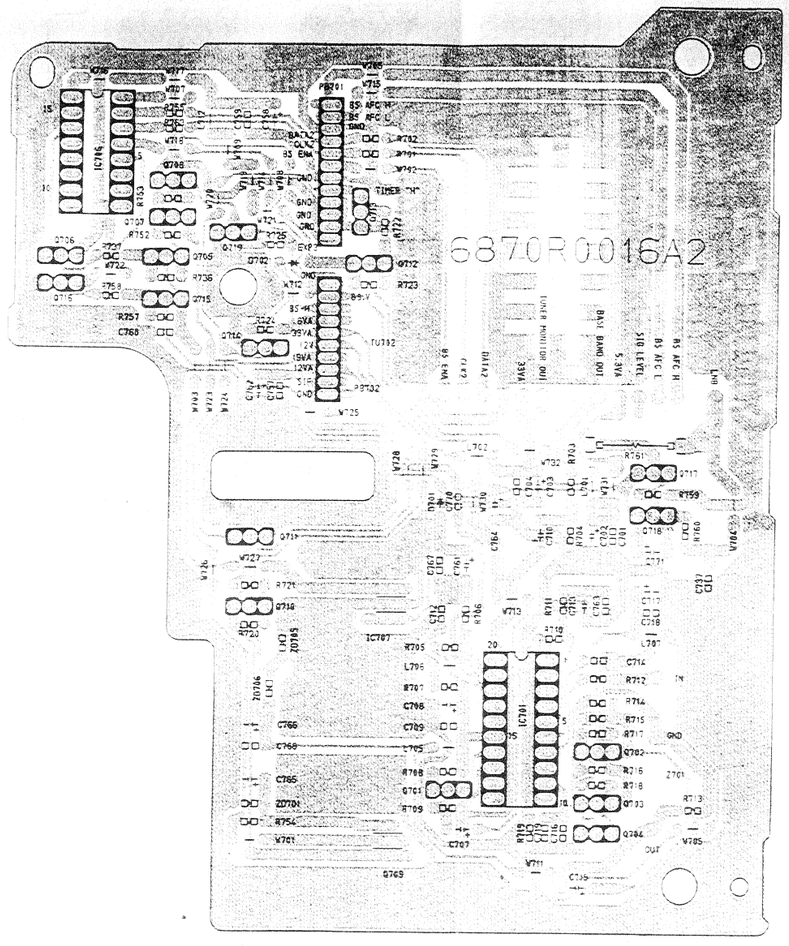
NOTE) ● : MEASUREMENT POINT
□ : ADJUSTMENT POINT
Emitter : TRANSISTOR
Collector
Base

10. SCART P.C.Board



LOCA NO.	Position
IC501	1C
Q501	2C
Q502	2C

11. BS P.C.Board



(Solder Side)

LOCA NO.	Posi-tion
IC701	3C
IC706	5A
Q701	2B
Q702	3C
Q703	2C
Q704	2C
Q705	4B
Q706	4A
Q708	4A
Q710	3B
Q711	3B
Q712	4B
Q713	4B
Q714	4B
Q715	4B
Q716	4A
Q717	4C
Q718	3C
Q719	4B

MEMO

SECTION 4
MECHANISM
CONTENTS

FRONT LOADING MECHANISM DISASSEMBLY

- Front Loading Mechanism Parts Location 4-3
1. Front Loading Mechanism Assembly ... 4-4
2. PCB Assembly 4-5
   2-1. PCB Assembly (R) 4-5
   2-2. PCB Assembly (L) 4-5
3. Top Plate 4-5
4. Carrier Bracket Assembly 4-6
   4-1. Carrier Bracket Assembly 4-6
   4-2. Cassette Opener 4-6
   4-3. Rid Opener 4-6
   4-4. Detect Lever and Detect Spring 4-6
   4-5. Support Bracket Assembly 4-7
   4-6. Carrier Bracket Assembly 4-7
5. Cassette Guide 4-7
6. Bracket Assembly Side 4-8
7. Bracket Assembly (L), (R) 4-8
8. Door Opener 4-8
9. Drive Gear Assembly 4-8
   9-1. Drive Gear Assembly 4-8
   9-2. Cushion Spring 4-8
   9-3. Cap-D 4-8
   9-4. Spring C.C 4-8
   9-5. Gear C 4-8
   9-6. Gear R 4-9
   9-7. Spring R 4-9
   9-8. Gear L 4-9
   9-9. Spring L 4-9
   9-10. Switch Lever 4-9

DECK MECHANISM DISASSEMBLY

- Deck Mechanism Parts Location 4-10
1. Auto Head Cleaner Assembly 4-11
2. Drum and Drum Base Assembly 4-11
3. Drum Assembly 4-11
   3-1. Drum Sub and Motor Assembly 4-11
   3-2. Upper and Lower Drum Assembly .. 4-12
4. A/C Head Assembly 4-12
5. Pinch Lever Assembly 4-12
6. Loading Motor Assembly 4-13
7. Take Up Lever 4-13
8. Take Up Arm Assembly 4-13
9. P4 Assembly 4-14
10. Pinch Gear 4-14
11. Full Erase Head Assembly 4-14
12. P1 Assembly 4-15
13. Tension Arm Assembly 4-15
14. Supply Soft, Supply Main, Take Up Soft and Take Up Main Brake Assembly 4-15
15. Bracket F/R Assembly 4-15
16. Supply Reel Assembly 4-16
17. Take Up Reel Assembly 4-16
18. Idler Gear (A), (B) 4-16
19. Pulley Gear Assembly 4-16
20. Bracket Bottom Assembly 4-16
21. Junction PCB Assembly 4-16
22. Capstan Motor/Brake Assembly 4-17
23. Function Plate 4-17
24. Ratchet Lever Assembly 4-18
25. Cam Gear, Rack T, Rack F.L 4-18
26. PC Gear 4-19
27. P2 and P3 Slant Assembly 4-19
28. Loading Gear Assembly 4-19
29. Tension Lever Assembly 4-20
30. Clutch Gear Assembly 4-20

MECHANISM ADJUSTMENT

- Tools and Fixtures for Deck 4-21
1. Mechanism State Switch (Mode Switch) Check 4-22
2. Preparation for Adjustment (To set VCR to the Loading State without inserting a cassette) 4-23
3. Tension post position and Tension Adjustment 4-24
4. Checking Torque 4-25
5. Guide Roller Height Adjustment 4-27
6. Audio/Control (A/C) Head Adjustment ... 4-29
7. X-Value Adjustment 4-30
8. Adjustment after Replacing Drum Assembly (Video Heads) 4-31
9. Check of Tape Travel after Reassembling Deck Assembly 4-30
   9-1. Check Audio and RF Locking Time during Playback after CUE or REV .. 4-30
   9-2. Check the coincidence of both Audio and Video Sync. (Lip sync.) .. 4-31
   9-3. Check the occurance of tape curl and Jam 4-31
   9-4. Check the adjustment state of Take-Up Guide 4-31
10. Maintenance/Inspection Procedure 4-32

MECHANISM TROUBLESHOOTING GUIDE

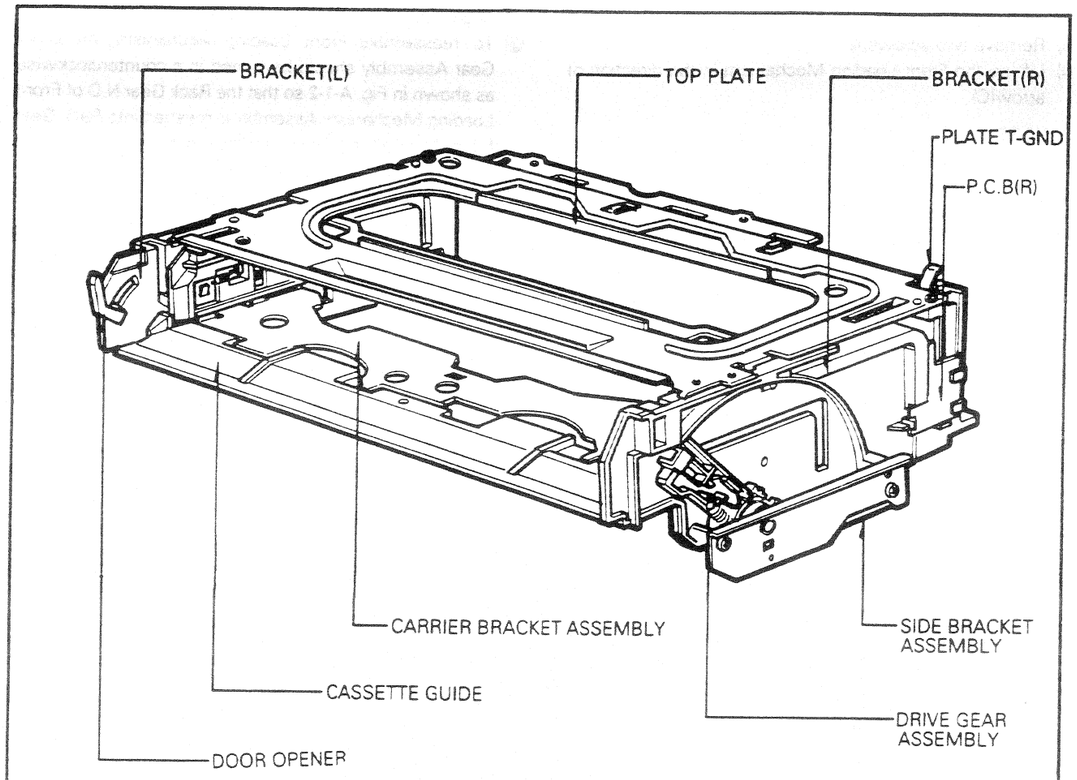
1. Deck Mechanism 4-35
2. Front Loading Mechanism 4-39

EXPLODED VIEWS

1. Moving Mechanism Section (I) 4-41
2. Moving Mechanism Section (II) 4-43
3. Front Loading Mechanism Section 4-45

FRONT LOADING MECHANISM DISASSEMBLY

- Front Loading Mechanism Parts Location



Front Loading Mechanism Parts Location

1. Component list below will be discribed as if the top and bottom covers and the front panel have already been removed.
2. P.C.B Assembly
3. Top Plate
4. Carrier Bracket Assembly
5. Cassette Guide
6. Side Bracket Assembly
7. Bracket(L), (R)
8. Door Opener
9. Drive Gear Assembly

1. Front Loading Mechanism Assembly (Fig. A-1-1)

1) Remove the Top and Bottom Covers and the Front panel.
2) Unplug the connector.
3) Remove two screws(A).
4) Lift up the Front Loading Mechanism in the direction of arrow(C).

• NOTE

1) When disassembling and reassembling
① Give special attention to removal and to reassemble, because two tabs(D) are engaged.
② Make sure that Bosses of Bracket(L),(R) are properly engaged in the holes of the chassis.
③ To reassemble Front Loading Mechanism, the Drive Gear Assembly should be turned in a counterclockwise as shown in Fig. A-1-2 so that the Rack Gear N.D of Front Loading Mechanism Assembly is meshed into Rack Gear F.L of Deck Mechanism Assembly correctly as shown in Fig. A-1-1.(B).

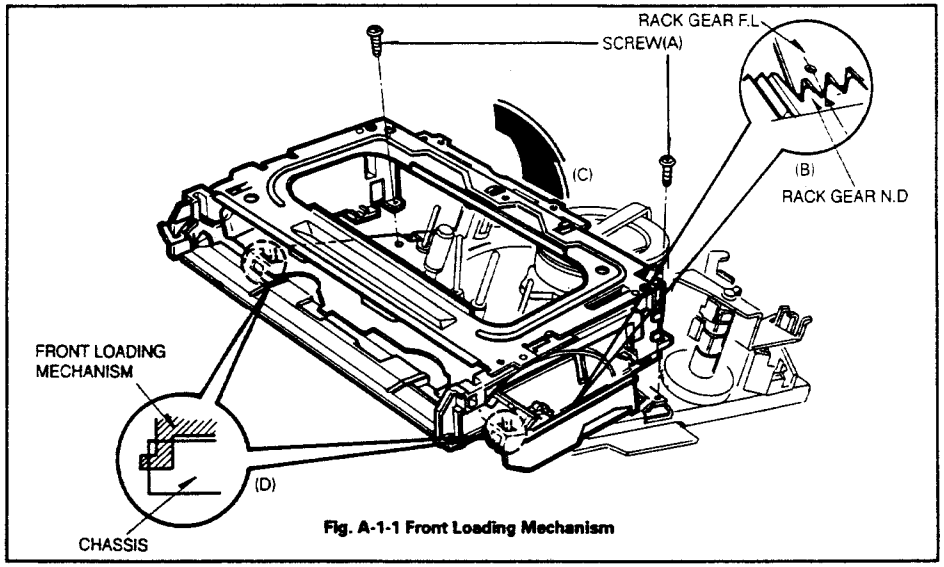


Fig. A-1-1 Front Loading Mechanism

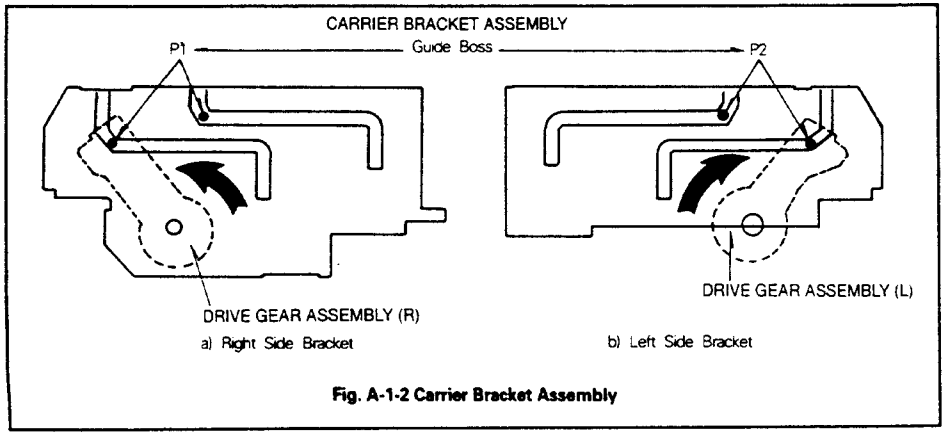


Fig. A-1-2 Carrier Bracket Assembly

2. PCB(Printed Circuit Board) Assembly

2-1. P.C.B Assembly(R)(Fig. A-2)

1) Remove the PCB Assembly(R) by pushing three Hooks (A) outward.
2) Release the Lead wire from stoppers.

2-2. PCB Assembly(L).(Fig. A-2)

1) Remove the PCB Assembly(L) by pushing the Hook(B) outward.
2) Release the Lead Wire from stoppers.

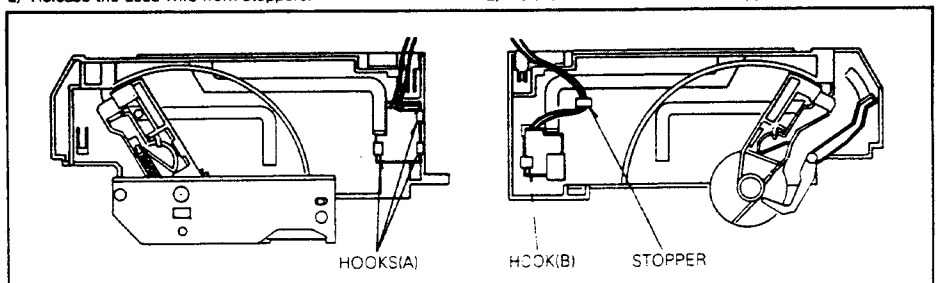


Fig. A-2 PCB Assembly

3. Top Plate(Fig. A-3)

1) Remove two screws(A).
2) Push the upper part of Top plate Ground and then lift up the Top Plate in the direction of arrow(B).

• NOTE

1) When reassembling, be certain that the tabs(C) of Top Plate is in both Bracket(L),(R).
① Then align the guide holes(D) of Top Plate with Bosses of side Bracket(L),(R).

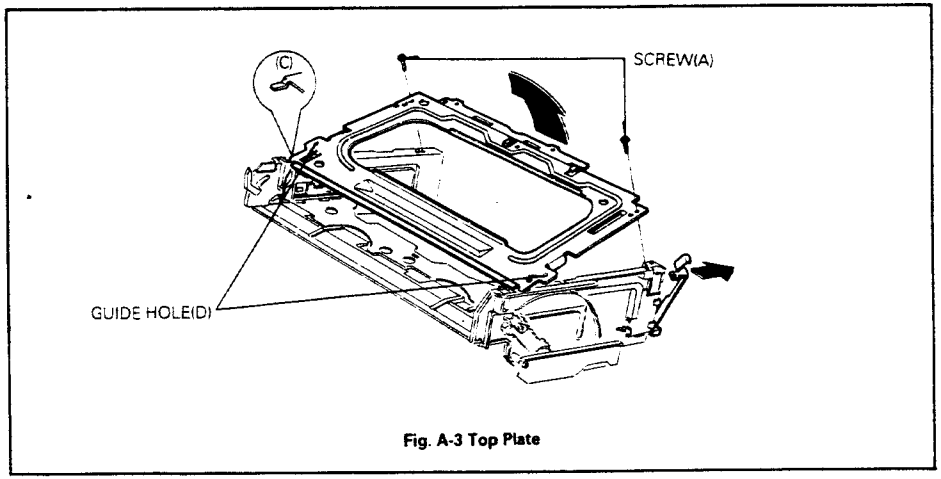


Fig. A-3 Top Plate

4. Carrier Bracket Assembly

4-1. Carrier Bracket Assembly(Fig. A-4-1)

1) Remove the Carrier Bracket Assembly by moving it in the direction of arrow(C).

• **NOTE**

1) When reassembling, be sure that parts(A) of Carrier Bracket Assembly are seated in parts(B) of Bracket(L),(R).

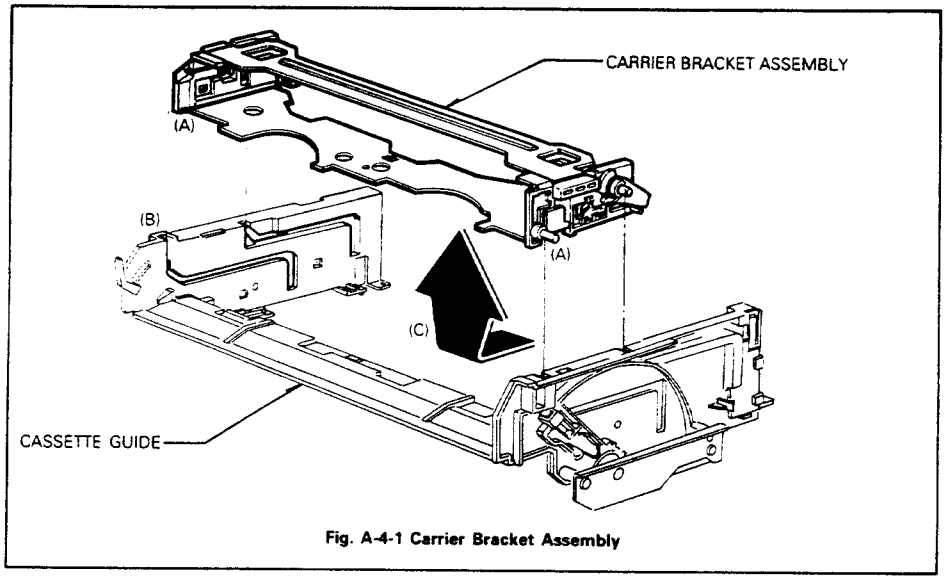


Fig. A-4-1 Carrier Bracket Assembly

4-2. Cassette Opener(Fig. A-4-2)

1) Release the spring O.C from the Hook(A) and then release it from Hook(C) of cassette opener.
2) Remove the cassette opener by releasing the Hook(B) from the Holder(R).

4-3. Rid Opener(Fig. A-4-2)

1) Remove the rid opener by pushing it outward.

• **NOTE**

1) When reassembling, seat the upper part of the rid opener in the grooved of Holder(R) and push it inward.

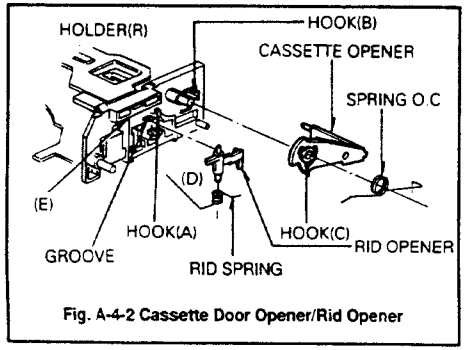


Fig. A-4-2 Cassette Door Opener/Rid Opener

4-4. Detect Lever and Detect Spring

1) Remove the spring detect.
2) Lower the side(A) of Detect Lever and then remove the Detect Lever by pushing it outward.

• **NOTE**

1) When reassembling, make sure that the part(C) of Detect Lever set in the part(B) of Holder(R).

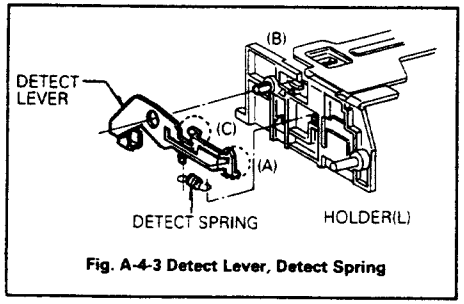


Fig. A-4-3 Detect Lever, Detect Spring

4-5. Support Bracket Assembly(Fig. A-4-4)

1) Take the Support Bracket out by releasing hooks(A),(B).

• **NOTE**

1) When disassembling and reassembling, be careful because heavy force can damage the hooks.

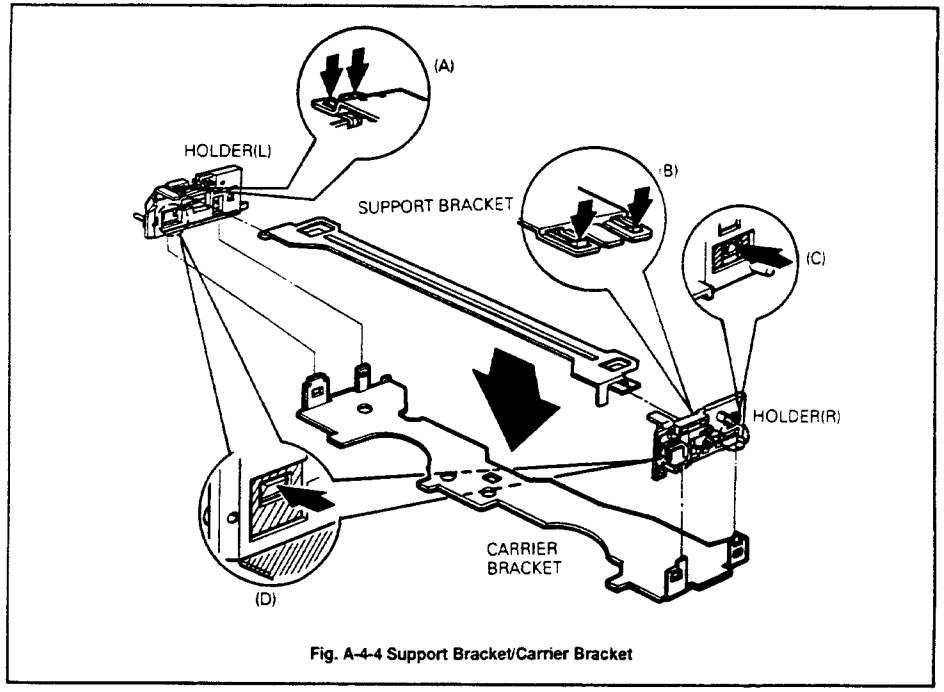


Fig. A-4-4 Support Bracket/Carrier Bracket

4-6. Carrier Bracket Assembly(Fig. A-4-4)

1) Remove the Carrier Bracket by releasing hooks(C),(D).

5. Cassette Guide(Fig. A-5)

1) Remove the Switch Spring with the Front Loading Mechanism Assembly turned over.
2) Push two hooks(B) outward.
3) Remove the Cassette Guide by pushing two hooks(A) outward(if one is removed, the other will be easy to remove)

• **NOTE**

1) When reassembling
① Seat projections(E) of Cassette Guide in holes of Bracket Assembly(L),(R) and then engage the Hook(A).
② After finishing previous step, fix the Cassette Guide to the Bracket Assembly(L),(R) by pushing two hooks(B) inward.

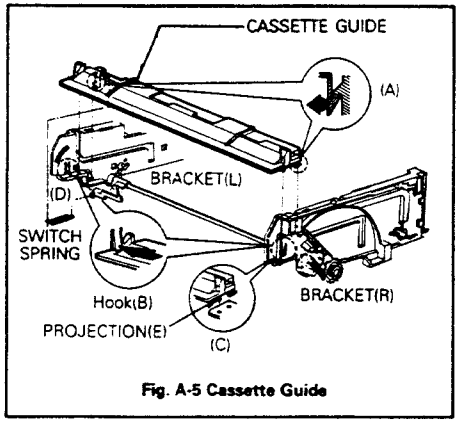


Fig. A-5 Cassette Guide

6. Bracket Assembly Side (Fig. A-6-1)

1) Remove two screws(A) and then remove the Side Bracket Assembly and the Rack Gear N.D.

• NOTE

1) When reassembling

① Turn the Drive Gear Assembly in the direction of arrow (C).

② Reassemble the Rack Gear N.D. to the Side Bracket Assembly, as shown in Fig. A-6-2, and then reassemble it to the Bracket Assembly(L). This time the Assembling Figure should be the same as(B) at the rectangular hole of Bracket Side.

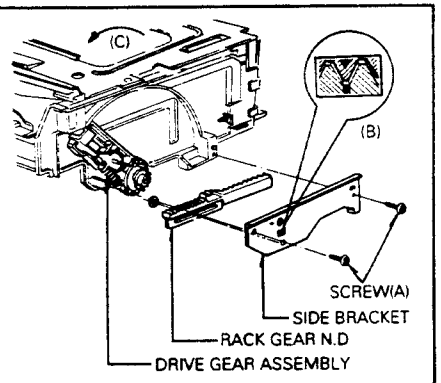


Fig. A-6-1 Side Bracket Assembly

Fig. A-6-2

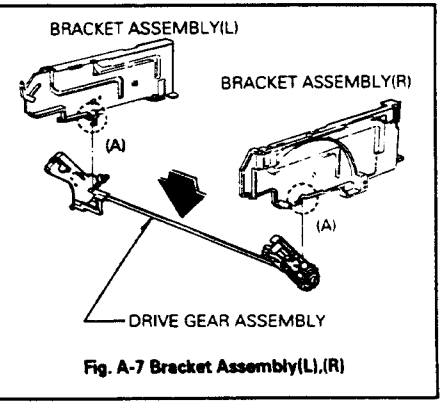


Fig. A-7 Bracket Assembly(L),(R)

7. Bracket Assembly(L),(R)(Fig. A-7)

1) Seperate the Bracket Assembly(L),(R) from the Gear Assembly Drive.

• NOTE

1) When reassembling, seat the shaft in the part(A) of Bracket Assembly(L),(R).

8. Door Opener(Fig. A-8)

1) Remove the Door Opener by pushing Hook(A) outward.

• NOTE

1) When reassembling, seat the part(B) of Door Opener in the hole( ) of Bracket(L).

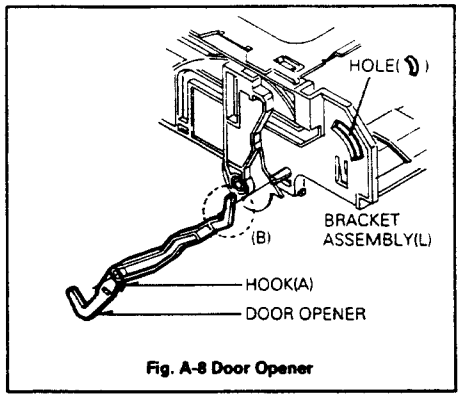


Fig. A-8 Door Opener

9. Drive Gear Assembly

9-1. Drive Gear Assembly(Fig. A-9-1)

1) Remove the Drive Gear Assembly from the Bracket Assembly(L),(R).

9-2. Cushion Spring(Fig. A-9-1)

1) Remove the cushion spring from the Gear R .

9-3. Cap-D(Fig. A-9-1)

1) Remove the Cap-D by lifting it up.

9-4. Spring C.C(Fig. A-9-1)

1) Remove the Spring C.C from the Gear R.

9-5. Gear C(Fig. A-9-1)

1) Remove the Gear C by lifting up when the projection of Gear C is aligned with the hole of Gear R while rotating the Gear C in the counterclockwise direction.

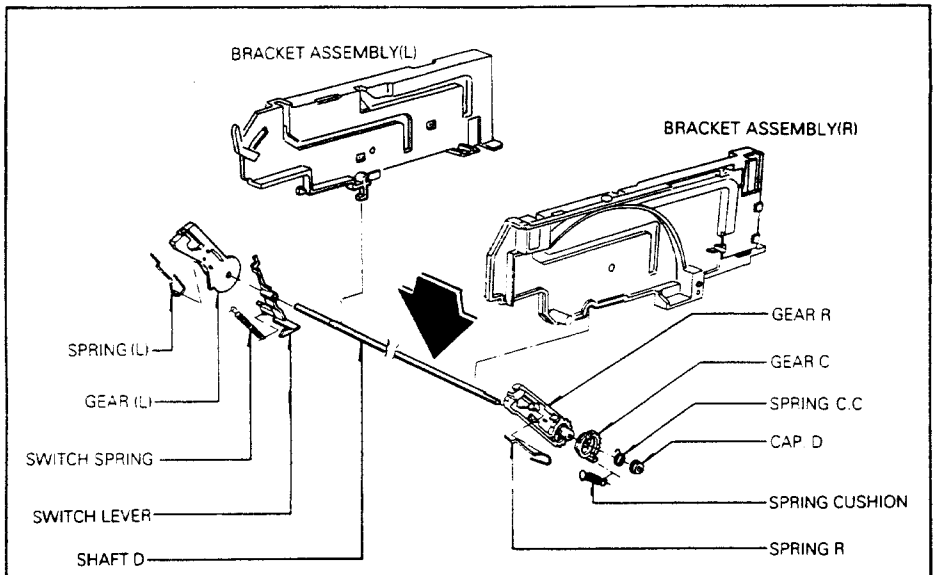


Fig. A-9-1 Drive Gear Assembly

• NOTE

1) When reassembling, seat the projections of Gear R in the holes of Gear C when the projection of Gear R is aligned with the hole of Gear C, and then keep the Gear C turned in the clockwise direction.

9-6. Gear R(Fig. A-9-1)

1) Lift up the Gear R from the Shaft.

9-7. Spring R(Fig. A-9-2)

1) Remove the Spring R by releasing Hooks.

• NOTE

1) When reassembling, be certain Spring R in the part(A) of Gear R.

9-8. Gear L(Fig. A-9-1)

1) Remove the Gear L from the shaft.

9-9. Spring L (Fig. A-9-2)

1) Remove the Spring L by releasing Hooks from the Gear L.

• NOTE: (Refer to the Spring R Section)

9-10. Switch Lever(Fig. A-9-1)

1) Remove the Switch Lever from the shaft.

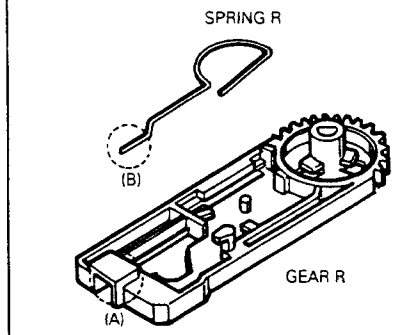
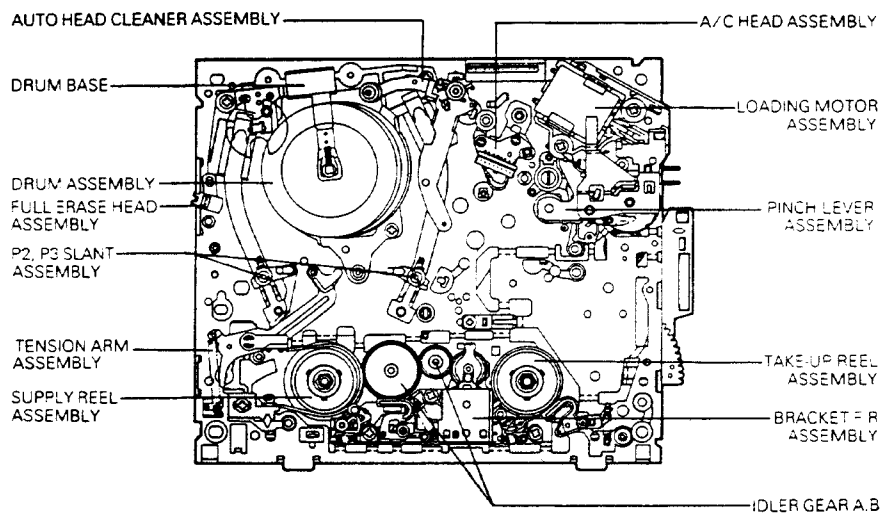


Fig. A-9-2 Spring R

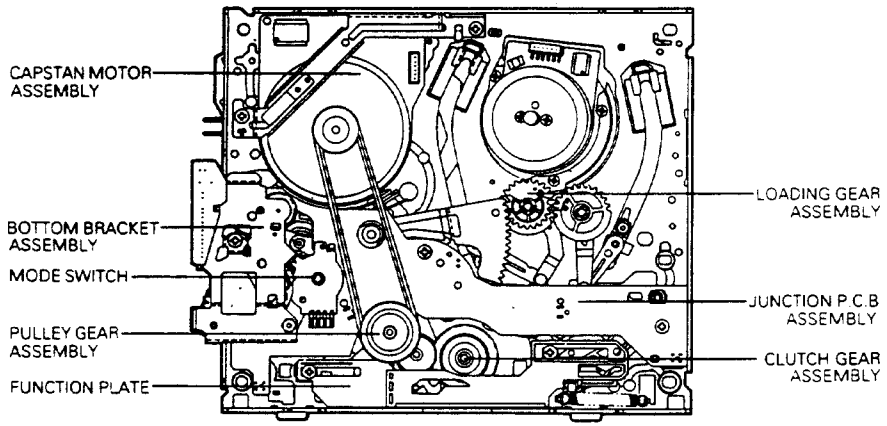
DECK MECHANISM DISASSEMBLY

• Deck Mechanism Parts Location

Top Side



Bottom Side



1. Auto Head Cleaner Assembly (Fig. B-1) (Optional Item)

1) Remove the Cleaner Arm Assembly (Auto Head Cleaner Assembly) by pushing the Locking Tab.(B) outward.
2) Remove the Cleaner Upper Spring and then remove the Cleaner Upper Arm Sub Assembly.
3) Remove the Cleaner Spring.

• NOTE

1) When reassembling, do not touch the Video Head Tip with fingers or tools.

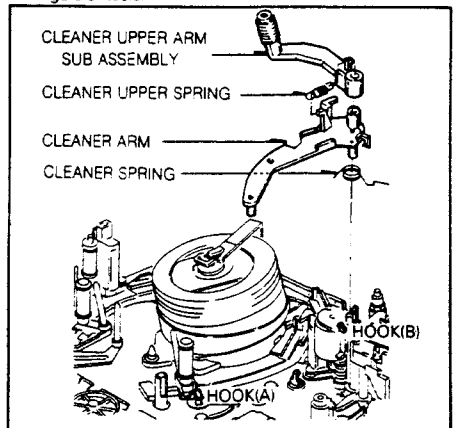


Fig. B-1 Auto Head Cleaner Assembly

2. Drum Assembly and Drum Base(Fig. B-2)

1) Remove the Auto Head Cleaner Assembly. (Option)
2) Unplug the connector with the Deck Mechanism Assembly turned over.
3) Loosen the screw(A) and then lift up the Drum Brush.
4) Remove two screws(B) and then lift up the Drum Assembly and Drum Base from the Deck Mechanism Assembly.
5) Separate the Drum Assembly from the Drum Base by Loosening three screws(C) on the back of Drum Base.

• NOTE

1) When disassembling and reassembling
① Do not touch the Video Head tip with fingers or tools. (Give special attention to disassembling and reassembling of Auto Head Cleaner Assembly)
② After reinstalling the Drum Brush, the Drum Brush should be aligned with the center of vertical axis of Drum Assembly.
③ After completing the reassembly, adjust the transportation system and the Servo P.G.

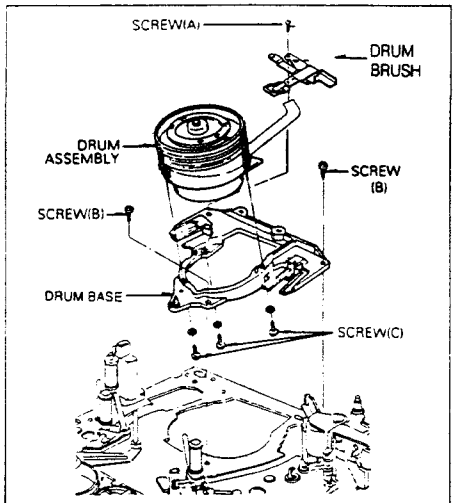


Fig. B-2 Drum Assembly/Drum Base

3. Drum Assembly

3-1. Drum Sub and Motor Assembly (Fig. B-3-1)
: New Type (No two screws and P.C.B on the Drum)

1) Remove the Drum Base from the Deck Mechanism Assembly.
2) Separate the Drum Assembly from the Drum Base.
3) Remove two screws(A) and then remove the rotor.
4) Remove three screws(B) and then remove the stator.

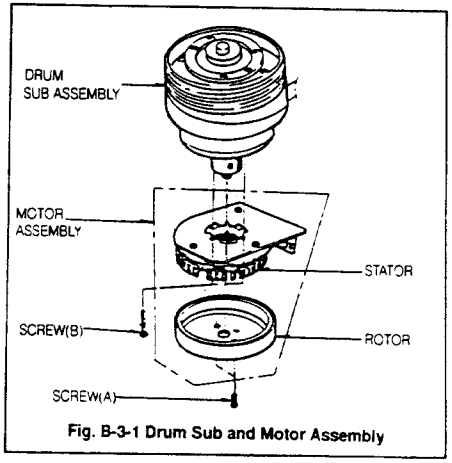


Fig. B-3-1 Drum Sub and Motor Assembly

• NOTE

1) When disassembling and reassembling
① Do not touch the Video Head Tip with fingers or tools.

3-2. Upper and Lower Drum Assembly (Fig. B-3-2)
: Old Type (There are two screws and P.C.B on the Drum)

1) Remove the Drum Assembly and Drum Base from the Deck Mechanism Assembly.
2) Separate the Drum Assembly from the Drum Base.
3) Remove two screws(A).
4) Remove the P.C.B.
5) Separate the upper Drum Assembly from the Lower Drum Assembly.

• **NOTE**
1) When disassembling and reassembling
① Do not touch the Video Head Tip with fingers or tools.
② Make sure that the color(white) marked on the P.C.B of the upper Drum should coincide with the color(Green) marked on the Flange Assembly.

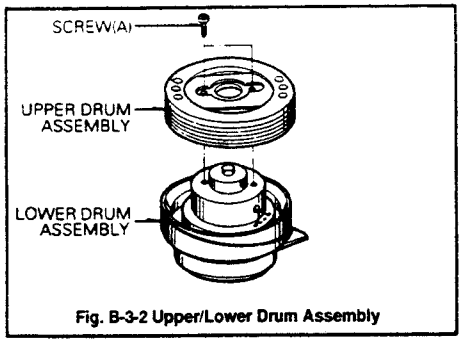


Fig. B-3-2 Upper/Lower Drum Assembly

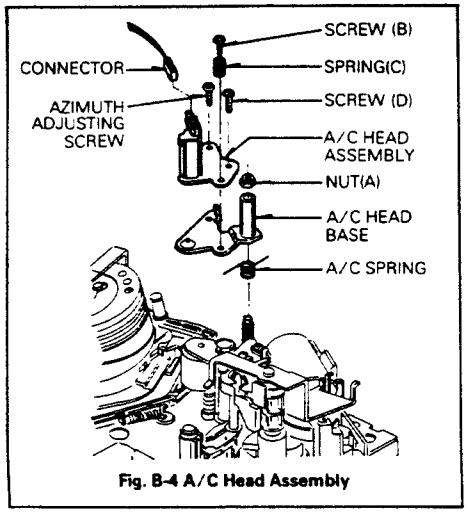


Fig. B-4 A/C Head Assembly

4. A/C(Audio/Control) Head Assembly (Fig.B-4)

1) Unplug the connector
2) Remove the Nut(A), and then lift up the A/C Head Assembly.
3) Remove the Azimuth Adjusting Screw.
4) Remove two screws(B),(D) and then separate the A/C Head Assembly from the Base A/C Head Assembly.

• **NOTE**
1) When disassembling
① First of all, release the spring A/C.
② Do not touch the A/C Head Tip with fingers or tools.
③ After reinstalling the Audio Control Head Assembly, adjust the Tilt, Azimuth and Height of A/C Head.

5. Pinch Lever Assembly(Fig. B-5)

1) Remove one Nut, and then remove the Dew Bracket.
2) Lift up Pinch Lever Assembly.
3) Remove the Pinch Spring, and remove the Pinch Lever.
4) Remove the Stopper Spring and remove the Pinch Stopper by lifting it up when the Hook of Pinch Stopper is aligned with the hole of Pinch Arm while rotating the Pinch Stopper in the counterclockwise direction.
5) Remove the Pinch Cap, and then remove the Pinch Roller Assembly.

• **NOTE**
1) When disassembling and reassembling
① Be careful not to get any foreign substance on the Roller.
② When disassembling the Pinch Cap, be careful not to damage the Pinch Arm.

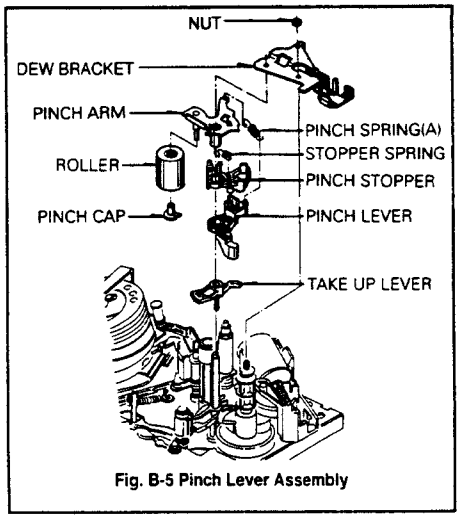


Fig. B-5 Pinch Lever Assembly

6. Loading Motor Assembly(Fig. B-6-1, B-6-2)

1) Remove the Dew Bracket.
2) Unplug the connector from the Junction P.C.B Assembly.
3) Remove two screws(A).
4) Remove the worm wheel by pushing it down.
5) Remove the Loading Motor Assembly by pushing(C) and (D) outward.
6) Remove the worm Gear Assembly from the Loading Motor Assembly by pushing it.

• **NOTE**
1) When reassembling
① Make sure that the worm assembly is seated in the axis of Loading Motor.
② Two grooves(G) of Loading Motor should be turned up and two projections(F) of Bracket Assembly should be seated in each at the two holes(E)(Fig. B-6-1).
③ Take notice of the polarity of the Loading Motor.

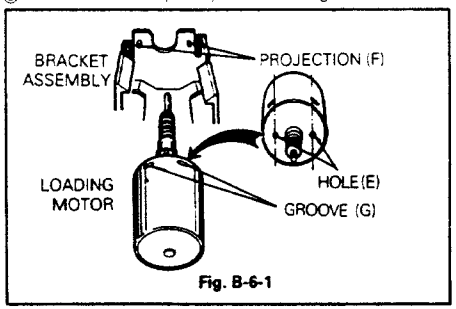


Fig. B-6-1

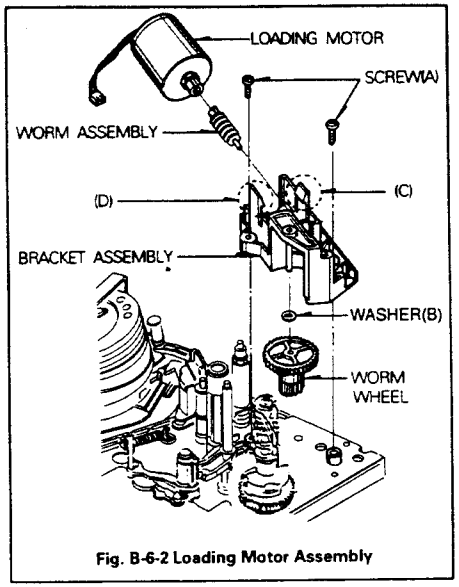


Fig. B-6-2 Loading Motor Assembly

7. Take Up Lever(Fig. B-7)

1) Remove the Loading Motor Assembly.
2) Remove the Dew Bracket(Fig. B-5).
3) Remove the Pinch Lever Assembly(Fig. B-5).
4) Keep the Pinch Gear turned in the clockwise direction (180°).
5) Remove the Take-Up Lever by pushing the hook(A) outward.

• **NOTE**
1) When disassembling and reassembling
① When disassembling the Take-Up Lever, be careful not to break the Hook(A).
② When reassemble the Take-Up Lever, align the appendant Gear of Lever Take-Up with the appendant Gear of Take-up Arm.
③ Reassemble the Take-Up Lever completely by hooking (A).
④ Be sure to replace together Take-Up Lever and Pinch Gear.
⑤ Be sure to assemble Pinch Lever Assembly before operating.

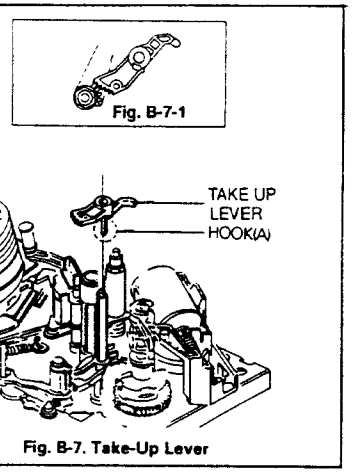


Fig. B-7. Take-Up Lever

8. Take Up Arm Assembly(Fig. B-8)

1) Remove the Loading Motor Assembly.
2) Remove the Dew Bracket, Pinch Gear, and the Take-Up Lever.
3) Remove one Washer(A).
4) Remove the Take-Up Arm Assembly by lifting it up.
5) Remove the spring(B).

• **NOTE**
1) When reassembling
① Align the Gear of Take-Up Arm with the Gear of Take-Up Lever(Fig. B-7-1).

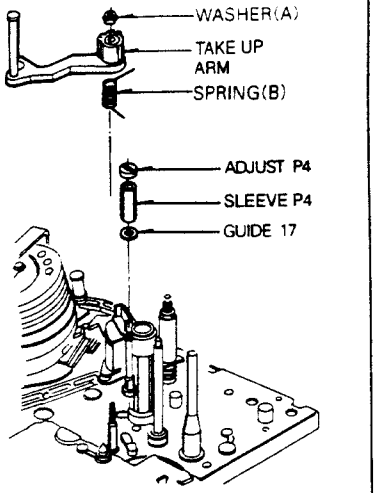


Fig. B-8 Take-Up Arm Assembly/P4

9. P4 Assembly(Fig. B-8)

1) Remove the Adjust P4.
2) Remove the Sleeve P4.
3) Remove the Guide 17.

10. Pinch Gear(Fig. B-10-1, B-10-2)

1) Remove the Loading Motor Assembly.
2) Remove one Nut(A) and then remove the Dew Bracket (Fig. B-5).
3) Remove the Pinch Lever Assembly by lifting it up(Fig. B-5)
4) Keep the Pinch Gear turned in the clockwise direction (180°).
5) Remove the Take-Up Lever by pushing the hook(A) outward(Fig. B-7).
6) Keep the Pinch Gear turned in the counterclockwise direction (180°).
7) Remove the Pinch Gear Assembly.

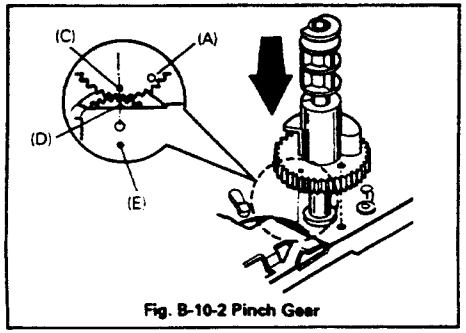


Fig. B-10-2 Pinch Gear

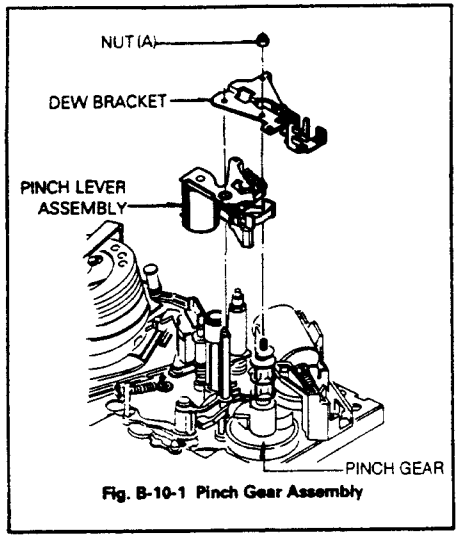


Fig. B-10-1 Pinch Gear Assembly

• **NOTE**

1) When reassembling, align the hole(A) of Pinch Gear with the hole of chassis, and the hole(C) of Pinch Gear with the groove(D) of the P.C.Gear. Hole(E) of chassis should be aligned with the hole of P.C.Gear.
2) Be sure to replace together Take-Up Lever and Pinch Gear.
3) Be sure to assemble Pinch Lever Assembly before operating.

11. FE(Full Erase) Head Assembly(Fig. B-11) (Optional Item)

1) Unplug the connector.
2) Remove one screw(A), and then remove the FE Head.

• **NOTE**

1) When disassembling and reassembling
① Do not touch the Video Head Tip with fingers or tools.

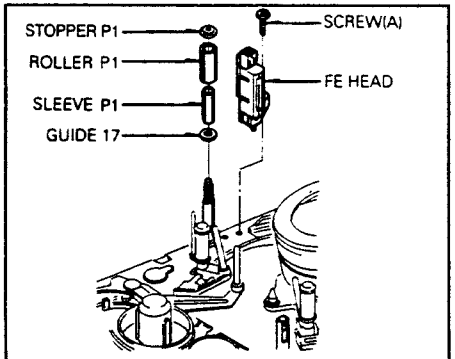


Fig. B-11 FE Head/P1

12. P1 Assembly(Fig. B-11)

1) Remove the Stopper P1
2) Remove the Roller P1
3) Remove the Sleeve P1
4) Remove the Guide 17.

13. Tension Arm Assembly(Fig. B-13)

1) Remove one screw(C).
2) Remove the Tension Spring.
3) Remove the Tension Arm Assembly by pushing hooks outward with the Deck Mechanism Assembly turned over.
4) Remove the Tension Band Assembly from the Tension Arm by pushing Hooks of Holder(A).

• **NOTE**

1) When disasembling and reassembling, give special attention to the disassembling and reassembling of Tension Arm Assembly, because the Tension Band is interposed between the Supply Reel and the Soft Brake.

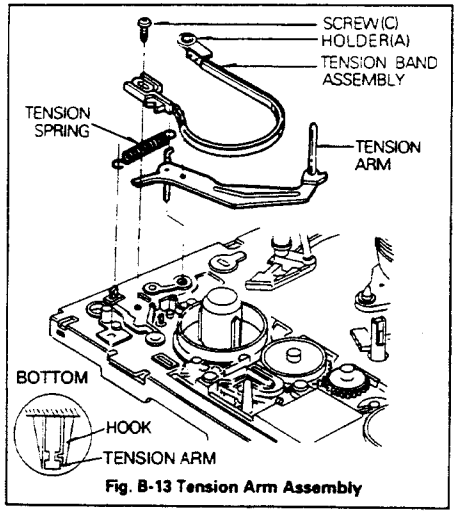


Fig. B-13 Tension Arm Assembly

14. Supply Soft/Supply Main/Take-Up Soft/Take-Up Main Brake Assembly

1) Supply Soft Brake(SSB)
   ① Remove the SSB Spring.
   ② Remove the SSB.
2) Supply Main Brake(SMB)
   ① Remove the SMB Spring.
   ② Remove the SMB.
3) Take Up Soft Brake(TSB)
   ① Remove the TSB Spring.
   ② Remove the TSB.
4) Take-Up Main Brake(TMB)
   ① Remove the TMB Spring.
   ② Remove the TMB.

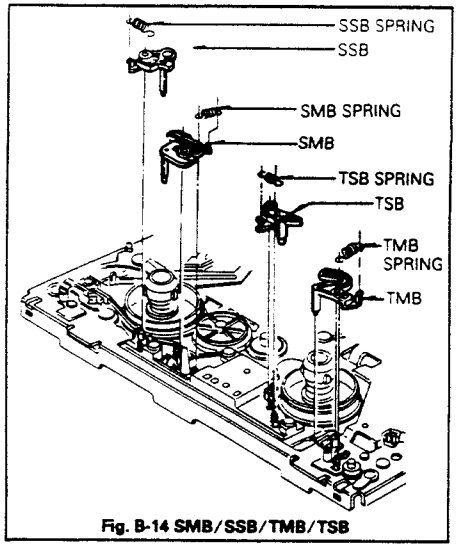


Fig. B-14 SMB/SSB/TMB/TSB

15. Bracket F/R(FF/Rewind) Assembly (Fig. B-15)

1) Remove the TMB.
2) Remove the Washer(A), and then remove the Gear F.R.
3) Remove three screws, and then remove Bracket F/R Assembly from the Deck Mechanism Assembly.
4) Remove the Washer(B), and spring Up/D, and then remove the Gear Up/D.
5) Remove the shaft(C), and then remove the Arm F.R, Lever F.R and Spring F.R.

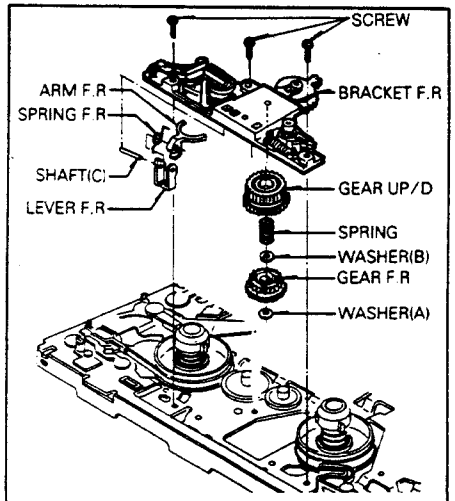


Fig. B-15 Bracket F.R Assembly

16. Supply Reel Assembly(Fig. B-16)

1) Remove the Tension Band Assembly.
2) Remove the Bracket F/R.
3) Lift up the Supply Reel Assembly from the Deck Mechanism Assembly.

17. Take Up Reel Assembly(Fig. B-16)

1) Remove the TMB(Fig. B-14)
2) Lift up the Take-up Reel Assembly from the Deck Mechanism Assembly.

• NOTE

1) When reassembling
① Make sure that the Supply and Take Up Reel are not exchanged.
② After reinstalling the Supply Reel Assembly, Adjust the Tension.

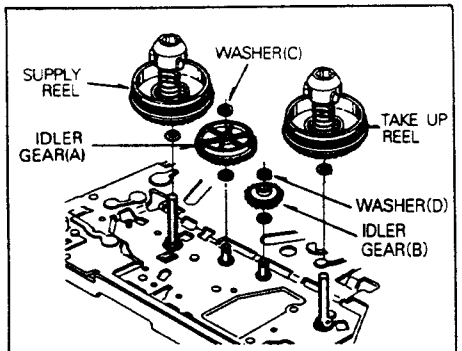


Fig. B-16 Supply Reel Assembly/Take-Up Reel Assembly

18. Idler Gear(A), (B)(Fig. B-16)

1) After removing the Supply Reel and supply Main Brake Assembly, remove the washer(C) and then remove the Idler Gear(A).
2) Remove the Washer(D) and remove the Idler Gear(B).

19. Pulley Gear Assembly(Fig. B-19)

1) Turn over the Deck Mechanism Assembly.
2) Remove the Capstan Belt.
3) Remove the Washer(A) and lift up the Pulley Gear.

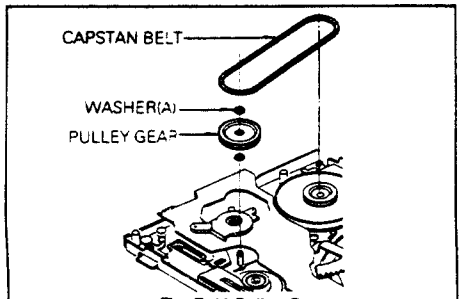


Fig. B-19 Pulley Gear

20. Bracket Bottom Assembly (Fig. B-20)

1) Remove one screw(A).
2) Remove one Hexagonal Nut, and then lift up the Bracket Bottom Assembly.
3) Remove one Washer(C), and lift up the Ratchet Gear 1.
4) Remove the washer(D), and then remove Ratchet Gear 3 from the Bracket Bottom.

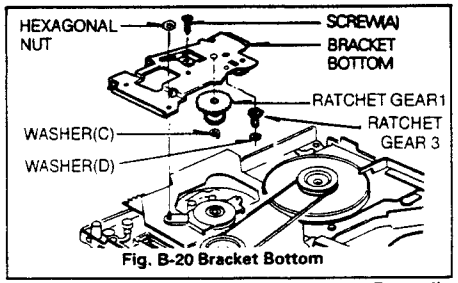


Fig. B-20 Bracket Bottom

21. Junction PCB(Printed Circuit Board) Assembly(Fig. B-21-1)

1) Remove the Bracket Bottom Assembly.
2) Remove two screws(A), (B) and then remove the Junction P.C.B Assembly.
3) Remove the Mode Switch from the Junction P.C.B Assembly.
4) Remove the Reel Sensor, Sensor LEDS and each holder from the Junction P.C.B(Fig. B-21-2).

• NOTE

1) When reassembling the Mode Switch, the groove(V) and (U) of Mode Switch should be at their original place in the Eject Mode.

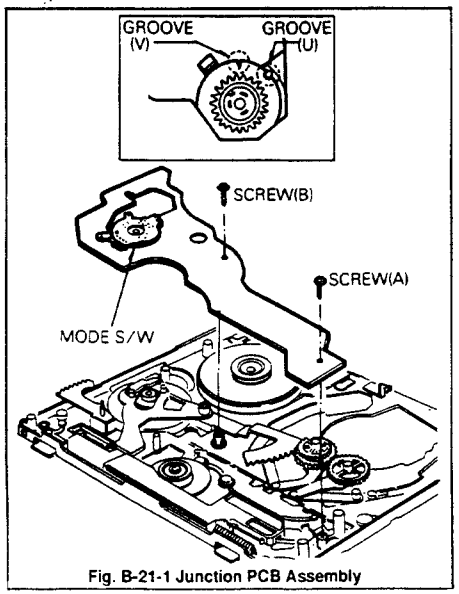


Fig. B-21-1 Junction PCB Assembly

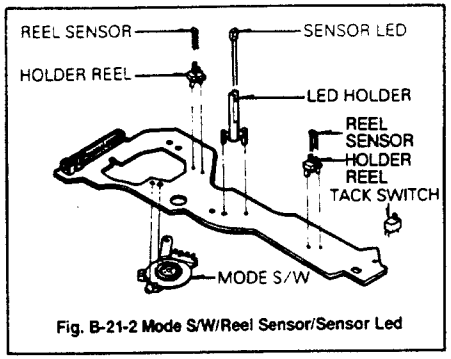


Fig. B-21-2 Mode S/W/Reel Sensor/Sensor Led

22. Capstan Motor and Brake Assembly (Fig. B-22-1)

1) Remove the Junction P.C.B Assembly
2) Hook the end of Capstan Brake Spring to the projection of Capstan Brake and then remove the Capstan Brake Assembly by lifting it up(Fig. B-22-2).
3) Remove two Screws(A), and then remove the Bracket C-Guide.
4) Remove the Connector.
5) Remove three screws(B), and then remove the Capstan Motor Assembly from the Deck Mechanism Assembly.

• NOTE

1) When disassembling and reassembling, hook end of the spring on the projection of Cap-Brake and remove it by lifting it up. Reassemble it in the opposite manner.

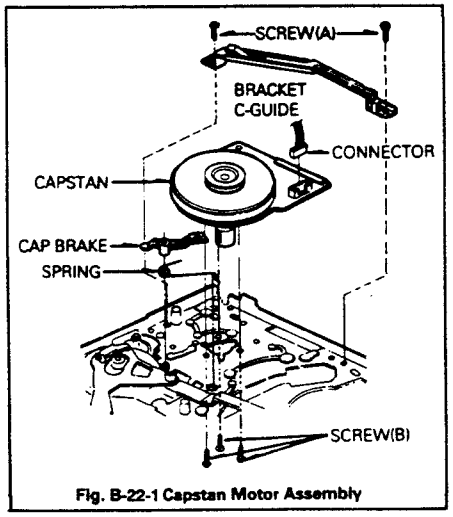


Fig. B-22-1 Capstan Motor Assembly

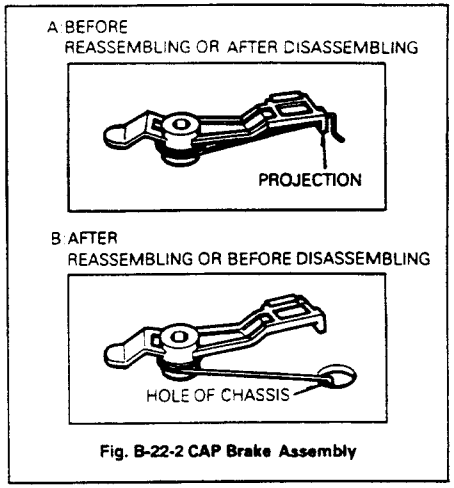

A BEFORE REASSEMBLING OR AFTER DISASSEMBLING
PROJECTION
B AFTER REASSEMBLING OR BEFORE DISASSEMBLING
HOLE OF CHASSIS

Fig. B-22-2 CAP Brake Assembly

23. Function Plate(Fig. B-23)

1) Remove two screws(B) in Eject Mode.
2) Remove the Function Plate Spring.
3) Push the Function Plate in the direction of arrow(A) and then lift it up.

• NOTE

1) When reassembling,the groove of Lower part of Function Plate should be aligned with the shaft of Tension Lever Assembly(Fig. B-29).

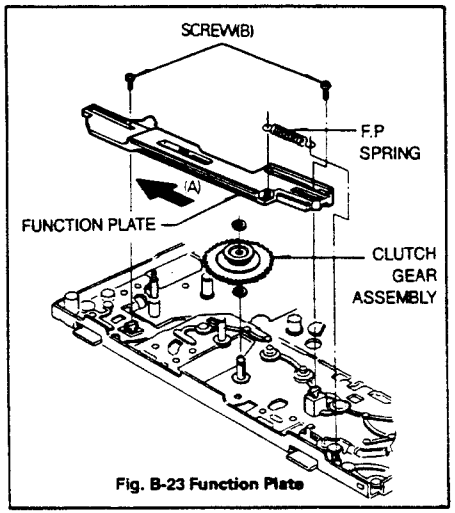


Fig. B-23 Function Plate

24. Ratchet Lever Assembly(Fig. B-24)

1) Remove the Function Plate
2) Remove the Junction P.C.B Assembly
3) Remove the Washer(A) and then remove the Ratchet Lever Assembly.
4) Remove the Ratchet Spring.
5) Remove the Ratchet Lever from the Ratchet 17 by lifting it up when the hook of it is aligned with the hole of Ratchet 17 while rotating it counterclockwise direction.
6) Remove the Washer(B), and turn over the Ratchet 17 and then remove the F-Lever Pin, Spring F-Lever.

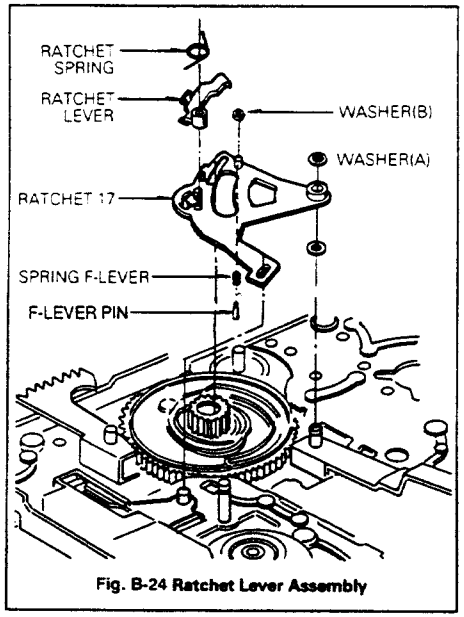


Fig. B-24 Ratchet Lever Assembly

25. Cam Gear/Rack Gear T/Rack Gear FL(Fig. B-25-2)

1) Remove the washer(A) and remove the Ratchet Lever Assembly.(Fig. B-25-1).
2) Remove the washer(B), and then remove the Cam Gear (Fig. B-25-2).
3) Remove the Rack Gear F.L.(Fig. B-25-3).
4) Remove the Washer(D).(Fig. B-25-3).
5) Remove the Rack Gear T.(Fig. B-25-3).

• NOTE

1) When reassembling

① Align the Projection of Rack Gear T with the hole of Loading Gear.

② Drive the Rack Gear F.L in the direction of arrow(D).

③ Hole of Cam should be aligned with the hole of chassis, and the groove(■) of Cam Gear should be aligned with the hole of PC Gear (Fig. B-26)

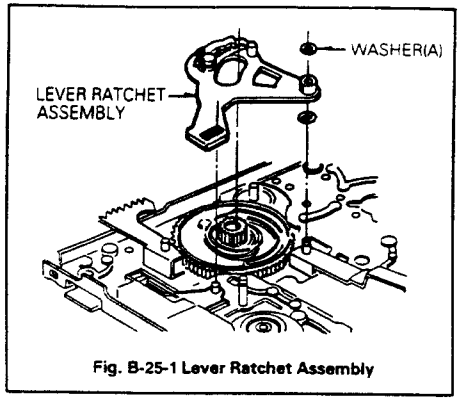


Fig. B-25-1 Lever Ratchet Assembly

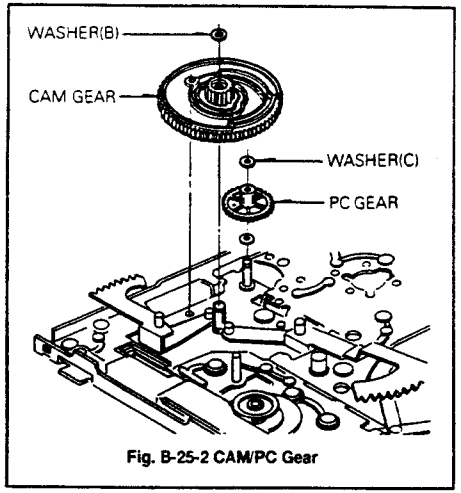


Fig. B-25-2 CAM/PC Gear

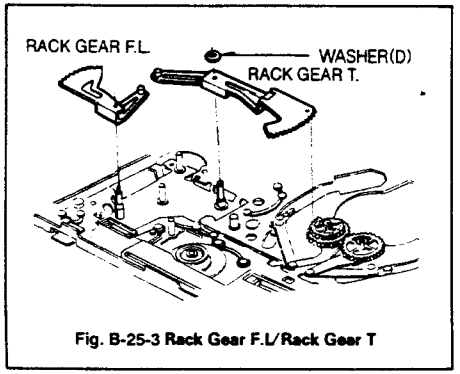


Fig. B-25-3 Rack Gear F.L/Rack Gear T

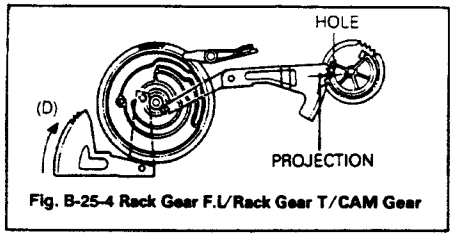


Fig. B-25-4 Rack Gear F.L/Rack Gear T/CAM Gear

26. PC Gear(Fig. B-26)

1) Remove the washer(C).
2) Remove the P.C Gear by lifting it up.

• NOTE

1) When reassembling

① The Groove of PC Gear should be aligned with the groove(V) of Cam Gear, and another hole of it should be aligned with the hole of chassis (Fig. B-26).

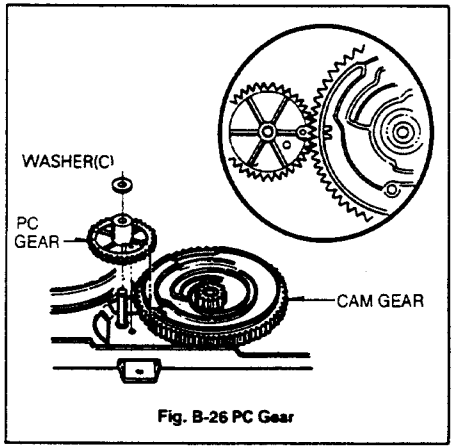


Fig. B-26 PC Gear

27. P2 and P3 Slant Assembly(Fig. B-27)

1) After finishing the disassembly of Drum Assembly, remove the P2 and P3 Slant Assembly by turning the Loading Gear(R) in the clockwise direction.(Loading direction)
2) Loosen the set screws.
3) Remove the Roller Guide from the Slant Base.

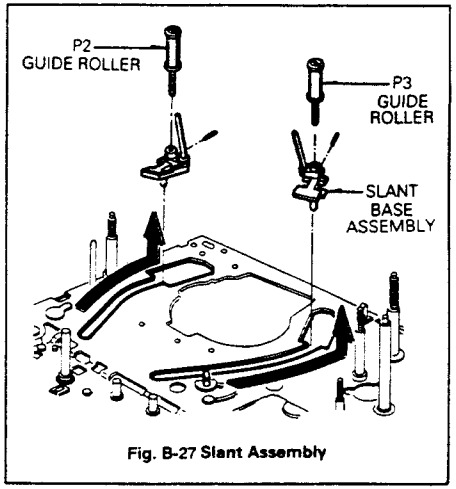


Fig. B-27 Slant Assembly

• NOTE

1) When disassembling and reassembling

① Use a Hexagonal wrench to remove set screw.

② Take notice that the P2 and P3 Slant Assembly should not be changed from their original place.

28. Loading Gear Assembly(L),(R) (Fig. B-28)

1) Remove the Cam Gear, Rack-T.
2) Remove the P2 and P3 Slant Assembly by turning the Loading Gear(L),(R) in the Loading direction
3) Lift up the Loading Gear Assembly(L),(R) from the Deck Mechanism Assembly.
4) Remove the Spring Load(L),(R).
5) Separate the Loading Gear(L), (R) from Arm Load(L), (R).

• NOTE

1) When reassembling

① Make sure that the Loading Gear(L) and (R) should not be changed from their original place.

② Align the groove of Loading Gear(L),(O) with the groove of Gear(R),(O).

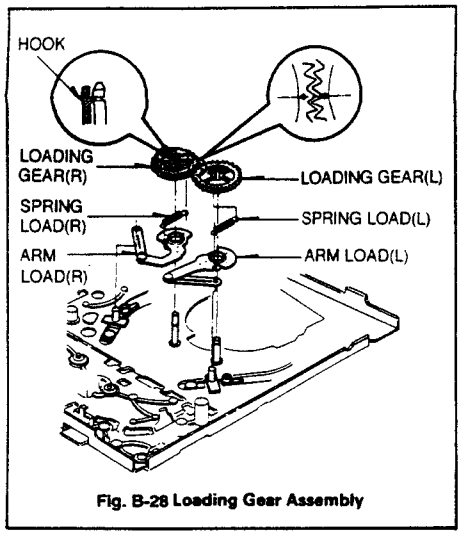


Fig. B-28 Loading Gear Assembly

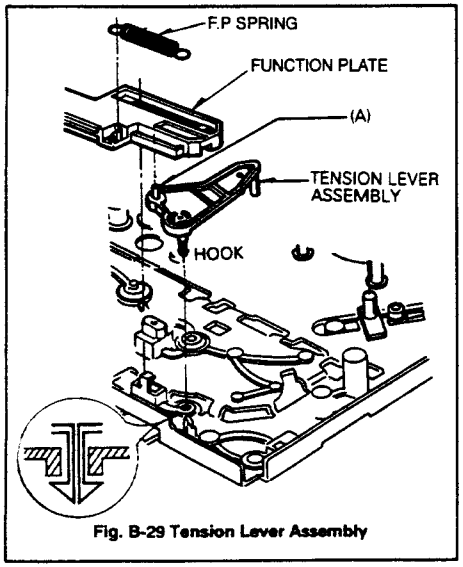


Fig. B-29 Tension Lever Assembly

29. Tension Lever Assembly (Fig. B-29)

1) Remove the Function Plate.
2) Remove the Tension Lever Assembly by pushing hooks inward.

• **NOTE**

1) When reassembling

① Set the part(A) of Tension Lever Assembly in the groove of Lower part of Function Plate.

30. Clutch Gear Assembly (Fig. B-30)

1) Remove the Pulley Gear.
2) Remove the Plate Function.
3) Remove the washer(A), and then remove the Clutch Gear Assembly.

• **NOTE**

1) When reassembling

① Do not disassemble the Clutch Gear Assembly any futher, because Torque adjustment is not adjustible.

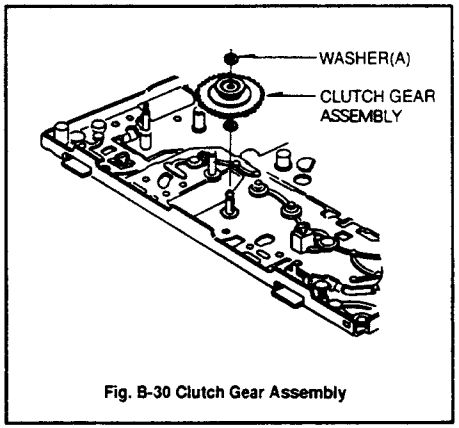


Fig. B-30 Clutch Gear Assembly

MECHANISM ADJUSTMENTS

• **Tools and Fixtures for Deck**

1. Back tension meter Parts No : D00-D006	2. Alignment tape Parts No NTSC: DTN-0001 PAL : DTN-0002	3. Torque gauge Parts No : D00-D002
4. Torque gauge adaptor Parts No : D09-R001	5. Post height adjusting driver Parts No : DTL-0005	6. M3 Nut driver Parts No : DTL-0006

1. Mechanism State Switch (Mode Switch) Check

Purpose: To detect accurately the mechanism state and prevent the mechanism from malfunction.

Test Equipment/Fixture	VCR State	Check Point
● Blank tape	● Eject Mode (with cassette ejected)	● Mechanism state switch (Mode Switch and Cam)

Check Procedure

1) Turn the VCR on and eject the tape by pressing eject button.
2) Remove the Cabinet Top, the Main P.C.Board and the CST Housing. Then push the CST IN/OUT switch (Loca. #137) and eject button at the same time.
3) Turn the worm (Loca. #082) of Loading Motor Assembly (Loca. #A10) to the left side (counter-clockwise) to align the three holes (A) of the Pinch Gear, the P.C.Gear and the Chassis.
4) Remove the Bottom Cover and then check that the groove (V) and the hole (O) of Mode S/W are aligned each other. If the above alignment is not obtained, adjust as follows.
   (1) Remove the Bracket Assembly Bottom and the Capstan Belt in the state of power off.
   (2) Remove the P.C.B Assembly, align the groove (V) and the hole (O) of Mode S/W each other and then reassemble the P.C.B Assembly.
   (3) Turn the power on and perform the various operations to check that the loading and the unloading are correct.

Check Diagram

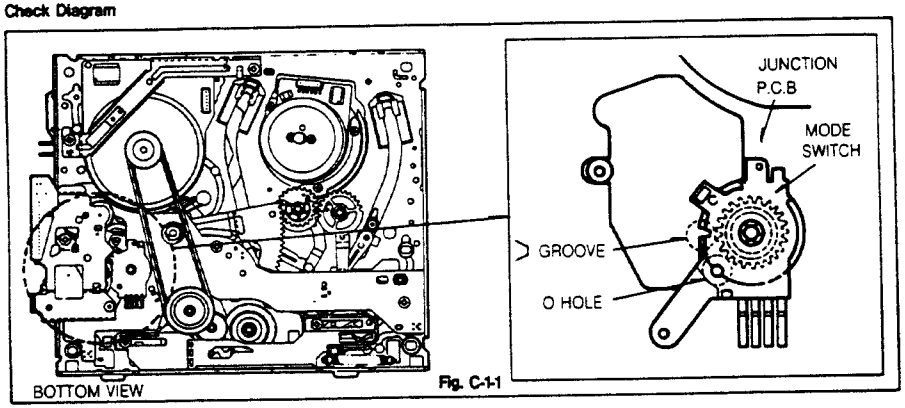


Fig. C-1-1

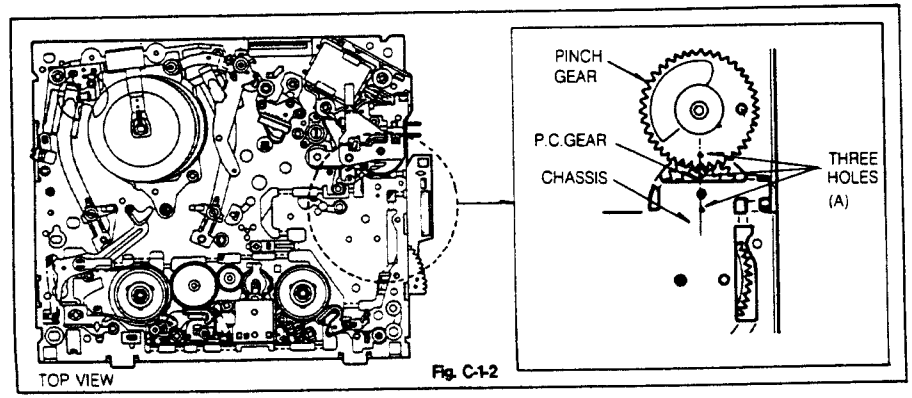


Fig. C-1-2

2. Preparation for Adjustment(To set VCR to the loading state without inserting a cassette)

1) Unplug the power cord from the AC outlet.
2) Remove the Cabinet Top and Front Loading mechanism.
3) Plug the power cord into the AC outlet.
4) Turn the VCR on and push the tact switch in the PCB Assembly.
   The VCR can accept input of each mode in this case. However the rewind and review operation cannot be performed for more than a few seconds because the take-up reel table is in the stop state and reel pulses cannot be detected.

(NOTE)
Always return the VCR to the Front Loading Mechanism Assembling State in the following order after the above operations have been performed.

1) Press the Eject button after turning the power on.
2) Wait for about 10 seconds until searching out the assembly position.
3) Assemble the Front Loading Mechanism and connect the Front Loading Mechanism Connector.
4) Refer to the "Front Loading Mechanism Disassembly" which is described previously.

3. Tension Post Position and Tension Adjustment

Purpose: To make the tension of tape constant so that the contact between the video heads and tape is stabilized.

Test Equipment/Fixture	VCR State	Adjustment Point
● Tension Meter (Tension adjustment)	● Play without cassette and with a Tension Meter	● Holder Band(B)

Adjustment Procedures

〈Position Adjustment〉

1) Perform loading without inserting a tape and loosen the screw that attaches the Holder Band(B) to the Deck Mechanism Assembly.
2) Insert the (-)type driver between the Holder Band(B) and the "V" groove of the chassis.
3) Move the Holder Band(B) right and left and align the center of tension post(Guide T-Post) with the center of P1(Shaft P1).(tolerance:Less than ±0.3mm)
4) Tighten the screw that attaches the Holder Band(B) to Deck Mechanism Assembly.

〈Tension Adjustment〉

1) Play the Tension Meter and read the Tension Meter: 38g•cm±4g•cm(reference value).
2) If the result is abnormal.
   (1) over the standard:loosen the screw, move the Holder Band(B) to the right a little and then tighten the screw and make sure that this adjustment is correct.
   (2) below the standard:loosen the screw, move the Holder Band(B) to the left a little and then tighten the screw and make sure that this adjustment is correct.

****CAUTION****

The range of movement of Holder Band(B) should be within ±1.5mm while being adjusted.
If the range is over, you should recheck the Reel Brake, Tension Arm and Spring.

Adjustment Diagram

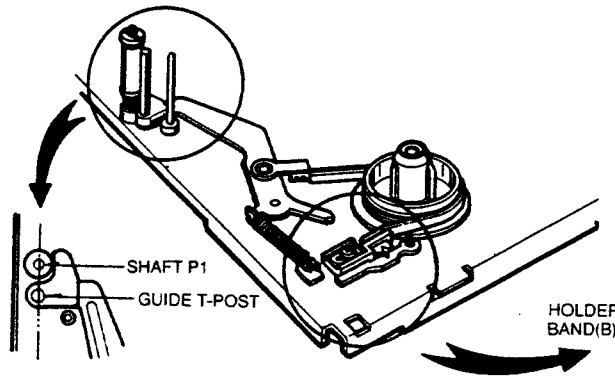


Fig. C-3-1

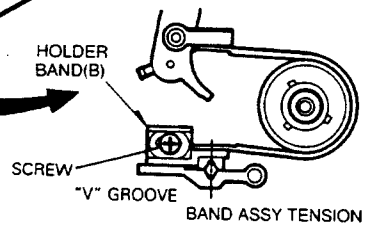


Fig. C-3-2

4. Checking Torque

Purpose: It is necessary to check the tension, torque and compression force at the tape take-up section and moving section to make the tape run smoothly and satisfy the basic performance of the VCR. Check these if the tape does not run smoothly or the tape speed is abnormal.

Test Equipment/Fixture	VCR state
● Torque Gauge ● Torque Gauge Adaptor ● Cassette Torque Meter SRK-VHT-063 : Play, Cue SRK-VHT-303 : Review	● Set the VCR to each operation mode without inserting a cassette. (See '2 Preparation for Adjustment')

Item	VCR Operation mode	Measurement Reel	Measurement Values
Main brake torque	Eject	Supply and take-up reels	600g.cm or more
Slack removal torque	Unloading(power off)	Supply reel	120~220g·cm
Fast forward torque	Fast forward	Take-up reel	600g·cm or more
Rewind torque	Rewind	Supply reel	600g·cm or more
Play take-up torque	Play	Take-Up reel	90~150g·cm
Review Torque	Review	Supply Reel	120~180 g.cm
CUE Torque	Cue	Take-Up Reel	110~170 g.cm

Checking Method

The values are measured by using a torque gauge and torque gauge adaptor with the torque gauge fixed.

Note: This value is measured when the VCR is shifted in the unloading direction from the fast forward or rewind mode and quick braking is applied to both Reel Tables.

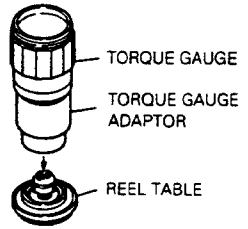


Fig. C-4

5. Guide Roller Height Adjustment

Purpose: To regulate the height of tape so that the bottom of tape runs along the tape guide line on the lower drum.

A. Preliminary Adjustment

Test Equipment/Fixture	VCR State	Adjustment Point
● Hexagonal Wrench or Bended Drive (+) Type ● Post Height Adjusting Driver	● Play an alignment tape	● Guide Roller Height Adjustment Screws on the Supply and Take-Up Guide Rollers.

Adjustment Procedure

1) Perform the precise adjustment.
2) When the Guide Roller is damaged, release the Guide Roller retaining screw and then replace the Guide Roller.

Adjustment Diagram

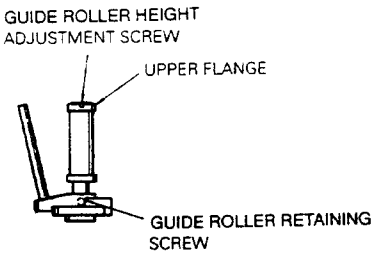


Fig. C-5-1

B. Precise Adjustment

Test Equipment/Fixture	Test Equipment Connection Points	VCR State	Adjustment Point
● Oscilloscope ● Post Height Adjusting Driver ● Alignment Tape(30HMP-2) ● Hexagonal wrench	● CH-1 : PB RF Envelope ● CH-2 (NTSC : SW30Hz / PAL : SW25Hz) ● Head Switching Output Point ● RF Envelope Output Point	● Play an alignment tape	● Guide Roller Height Adjustment Screws.

Adjustment Procedure

1) Play an alignment tape after connecting the probe of the oscilloscope to RF Envelope Output Test Point and Head Switching Output Test Point.
2) Tracking control(in PB mode) : Center position(When this adjustment is performed after the drum assembly has been replaced, set the tracking control so that the RF output is maximum.)
3) Height adjustment screw : Flatten the RF waveform.
4) Turn(Move) the tracking control(playback) clockwise and counterclockwise.(to the right and left)
5) Check that any drop of RF output is uniform at the start and end of the waveform.

"CAUTION"
If the adjustment is excessive or insufficient the tape is jammed or folded.

Waveform Diagrams

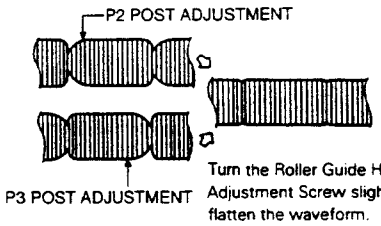
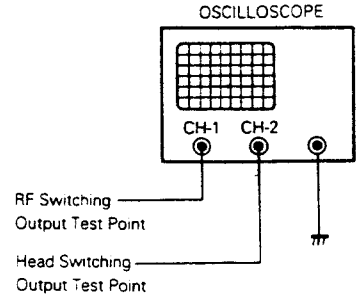


Fig. C-5-2

Tracking control at center — Turn(Move) the tracking control to both directions.

Fig. C-5-3

Connection Diagram



6. Audio/Control(A/C) Head Adjustment

Purpose: To keep the contact between the tape and head so that the specificed track is recorded and played back.

A. Preliminary Adjustment (Perform the preliminary adjustment, when there is no Audio Output signal with alignment tape.)

Test Equipment/Fixture	VCR State	Adjustment Points
● M3 Nut Driver		● Special screw ● Cone Point Screw for tilt ● Azimuth Adjustment Screw
● Blank tape	● Run the blank tape	● A/C Head Adjuster

Adjustment procedure/Adjustment Diagram

1) Tighten the special screw so that the spring section protrudes 6.4mm(approx.) over the top of Head Base (1).

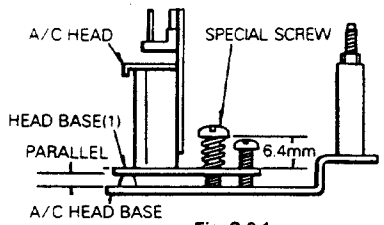


Fig. C-6-1

2) Turn the Azimuth Adjustment Screw and Cone Point Screw so that the Head Base(1) and A/C Head Base are parallel.

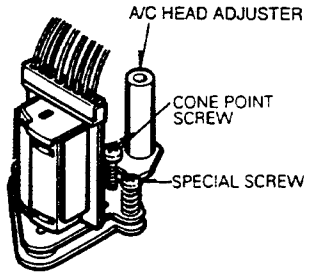


Fig. C-6-2

3) Load a blank tape and set the VCR to the play mode.

4) Confirm that the tape runs fittingly to the lower limit of the P4 post. Also confirm that the tape runs smoothly.

5) If adjustment is required, turn Cone Point Screw clockwise until curling is apparent at the lower edge of P4. Then turn Cone Point Screw counterclockwise until the curling smooths out.

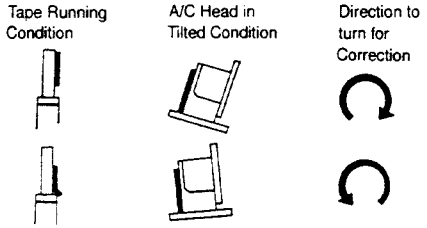


Fig. C-6-3

6) Check that there is no conspicuous curling and folding around the A/C head. If there is conspicuous curling or folding, readjust the Cone Point Screw, Azimuth Adjustment Screw and A/C Head Adjuster. When the bottom edge of tape is 0.20~0.25mm from the bottom edge of the control head's core, the height of A/C head is ideal.

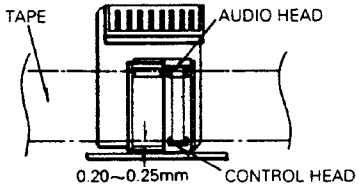


Fig. C-6-4

7) If necessary repeat steps 1 through 4 until a precise adjustment is achieved.

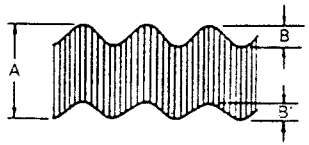
B. Precise Adjustment

Test Equipment/Fixture	Test Equipment Connection Point	VCR State	Adjustment Points
● Oscilloscope ● Alignment tapes ● M3 Nut Driver	● Audio output jack	● Play an alignment tape 1KHz, 7KHz sections	● Azimuth Adjustment Screw ● A/C Head adjuster ● Cone point screw

Adjustment Procedure

1) Connect the probe of oscilloscope to audio output jack.
2) Adjust the Azimuth Adjustment Screw, A/C Head adjuster and cone point screw slightly and alternately so that an Audio 1KHz output is maximum and flat. (minimum fluctuation).
3) Adjust the Azimuth Adjustment Screw slightly and alternately so that the Audio 7KHz output is maximum.

Waveform Diagram



A:Maximum BB' Minimum

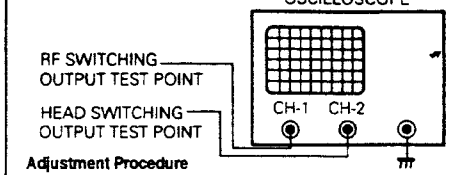
Fig. C-6-5

7. X-Value Adjustment

Purpose: To obtain compatibility with other VCRs.

Test Equipment/Jigs	Test Equipment Connection Points	VCR State	Adjustment Points
● Oscilloscope ● Alignment tapes ● Post Height Adjusting Driver	● CH-1:PB RF Envelope ● CH-2:SW 30Hz ● Head Switching Output Test Point ● RF Envelope Output Test Point	● Play an alignment tape	● Adjust X

Connection Diagram



Adjustment Procedure

1) Insert a cassette tape, and then "AUTO TRACKING" will be displayed on the Digitron, then push the Tracking ⊕ or ⊖ Keys one time as soon as possible to make the VCR release the Auto Tracking.
2) Turn the Adjust X to the maximum RF Envelope level when the VCR is free from the Auto tracking.
3) If RF envelope output is maximized from the center click position in the right direction (clockwise), set the tracking control to the center and turn the X Adjust counterclockwise.
4) If in the left direction (counterclockwise), turn it clockwise by the same method.
5) In case of the 30 μm, head will trace over a 60 μm width track, readjust it so that RF Envelope output begins falling at the same angle when tracking control is turned either left or right.

Adjustment Diagram

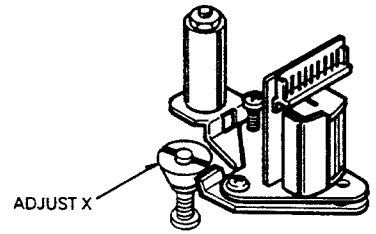


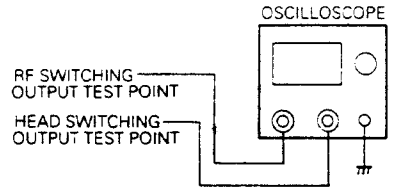
Fig. C-7

8. Adjustment after Replacing Drum Assembly(Video Heads)

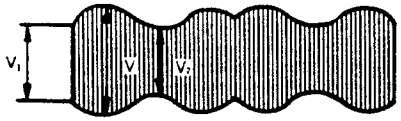
Purpose: To suppress drift in the height relative to the Guide Roller and drift of the X Value after replacing the drum.

Test Equipment/Fixture	Test Equipment Connection Points	VCR State	Adjustment Points
● Oscilloscope ● Post Height Adjusting Driver ● Alignment tape ● Blank tape ● M3 Nut Driver	Checking the flatness ● CH-1 : PB RF Envelope ● CH-2 (NTSC : SW30Hz, PAL : SW25Hz) ● Head Switching Output Point ● RF Envelope Output Point	● Run the blank tape ● Play an alignment tape	● Guide Rollers Precise Adjustment ● Switching point ● Tracking point ● X-Value

Connection Diagram



Waveform Diagram



V_1/V MAX $\geq$ 0.7
V_2/V MAX $\geq$ 0.8
RF ENVELOPE OUTPUT

Fig. C-8

Checking/Adjustment Procedure

1) Run the blank tape, check and adjust whether the Roller Guide is curling or creasing tape around the Roller Guide.
2) Check the RF envelope output flatness and adjust the Roller Guide Height while playing an alignment tape.
3) Adjust the head switching point.
4) Check that RF envelope output is maximum when the tracking is at the initial position.
5) Adjust the Tracking Preset and X-Value Adjust with X Adjust.

9. Check of Tape Travel after reassembling Deck Assembly

9-1. Check Audio and RF Locking Time during playback after CUE or REV.

Test Equipment/Fixture	Specification	Test Equipment Connection Point	VCR State
● Oscilloscope ● Alignment tape (with 6H 3kHz Color Bar Signal) ● Stop Watch	● RF Locking Time : Less than 5 sec. ● Audio Locking Time : Less than 10 sec.	● CH-1 : PB RF Envelope ● CH-2 : Audio Output ● RF Envelope Output Point ● Audio Output Jack	● Play an alignment tape (with 6H 3kHz Color Bar Signal)

Checking Procedure

1) Change the mode of CUE or REV to play.
2) At this time, confirm that the Locking Time of Audio and RF Output Waveform fits to specification.
3) If the results checked above are abnormal, reapeat adjustments 4 through 8.

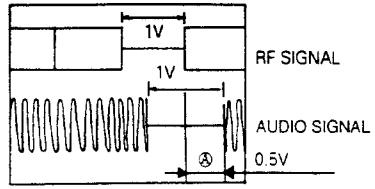
※ 6H : LP

9-2. Check the coincidence of both Audio and Video Sync.(Lip Sync.)

Test Equipment/Fixture	Specification	Test Equipment Connection Point	VCR State
● Oscilloscope ● 2H 9V Tape(for X-Value Adjustment Coincidence) or alignment tape	● Less than ±0.5V	● CH-1 : PB RF Envelope ● CH-2 : Audio Output ● RF Envelope Output Point ● Audio Output Jack	● Play a 2H 9V tape or an alignment tape.

Checking Procedure

1) Confirm that the period Ⓐ of Fig. C-9-1 is within ±0.5V.
2) If the result is abnormal, repeat adjustment #7. (X-Value adjustment).



※ 2H : SP, V : Vertical

Fig. C-9-1

9-3. Check the occurance of tape curl and jam

Test Equipment/Fixture	Specification	VCR State
● T-160 Tape ● T-120 Tape	● Be sure there is no jam or curl at the beginning, the middle period or the end of the T-160 tape.	● Run the CUE, REV play mode at the beginning and the end of the tape.

Checking Procedure

1) Confirm whether the state of each transportation post is normal.
2) Make sure nothing is wrong with the operation of the Counter, when the lower part of tape is folded.
3) Be sure there is nothing wrong in the Audio signal, when the upper part of tape is folded.
4) If the result is abnormal, repeat adjustment #5 and #6.

9-4. Check the adjustment state of Take-Up Guide

Test Equipment/Fixture	Specification
● T-120 Tape ● Take-Up Guide Adjusting Driver	● Review : Travel the tape that align the top of the P4 Guide and the bottom of the Tape or be folded. ● Play : Travel the tape that align the top of the P4 Guide and the bottom of the Tape.

Checking Procedure

1) Run the CUE or PLAY mode at the middle period or the end of the T-120 tape.
2) Run the REV mode at the play or cue part of tape.
3) At this time, confirm that the change of tape height at the P4 Guide fits to specification.
4) If the result is abnormal, refer to Table 9-1.
5) Play the beginning of T-120 tape(within 5 min.)
6) Confirm that the state of tape transportation fit to specification in P4 Guide.
7) Remove the Tension Arm Assembly by rotating in the clockwise direction and then confirm that the state of tape transportation fit to specification.
8) If the result is abnormal, refer to Table 9-1.

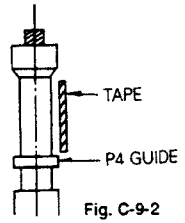


Fig. C-9-2

PLAY Mode	REV Mode	Adjustment Method
Tape Falling	Tape Lift	Bend the shaft of the direction +Y.
Tape Lift	Tape Falling	Bend the shaft of the direction -Y.

Table 9-1

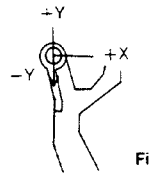


Fig. C-9-3

10. Maintenance/Inspection Procedure

(1) Required Maintenance

The recording density of a VCR is much higher than that of an audio tape recorder. VCR components must be very precise, at tolerances of 1/1000mm, to ensure compatiblity with other VCRs. If any of these components are worn or dirty, the symptoms will be the same as if the part is defective. To ensure good picture, periodic inspection and maintenance, including replacement of worn out parts and lubrication, are necessary.

(2) Scheduled Maintenance

Schedules for maintenance and inspection are not fixed because they vary greatly according to the way in which the customer uses the VCR, and the environment in which the VCR is used.

But, in general home use, a good picture will be maintained if the inspection and maintenance is made every 1,000hours. The table below shows the relation between time used and inspection period.

Table 1

When inspection is necessary / Average hours used per day	About 1 year	About 18 months	About 3 years
One hour	▼	▼	▼
Two hours	▼	▼	▼
Three hours	▼	▼	▼

(3) Check before starting repairs

The following faults can be remedied by cleaning and oiling. Check the needed lubrication and the conditions of cleanliness in the unit.

Check with the customer to find out how often the unit is used, and then determine that the unit is ready for inspection and maintenance. Check the following parts.

Table 2

Phenomenon	Inspection
Poor S/N, no color	Dirt on video head or worn video head
Tape does not run or tape is slack	Dirt on pressure roller, belt or flywheel belt
Vertical jitter, horizontal jitter	Dirt on video head or in tape transport system
Color beats	Dirt on full-erase head
Low volume or sound distorted	Dirt on audio/control head
Fast forward or rewind is not done or rotation is slow	Dirt on belt

(4) Supplies Required for Inspection and Maintenance

(1) Greases Kanto G-31(or equivalent)
(2) Alcohol(Isopropyl Alcohol)
(3) Cleaning Patches

5) Maintenance Procedure

5-1) Cleaning

(1) Cleaning video head

First use a cleaning tape. If dirt on head is too stubborn to remove by tape, use the cleaning patch. Coat the cleaning patch with alcohol(Isopropyl Alcohol) to the point indicated. Touch the cleaning patch to the head tip and gently turn the head(rotating cylinder) right and left.

(Do not move the cleaning patch vertically and make sure that only the buckskin on the cleaning patch comes into contact with the head. Otherwise, the head may be damaged.)

Thoroughly dry the head. Then run test tape. If alcohol (Isopropyl Alcohol) remains on the video head, the tape may be damaged when it comes into contact with the head surface.

(2) Clean the tape transport system and drive system, etc, by wiping with a cleaning patch wetted with alcohol (Isopropyl Alcohol).

Note:

① It is the tape transport system which comes into contact with the running tape. The drive system consists of those parts which move the tape.

② Make sure that during cleaning you do not touch the tape transport system with the tip of a screw driver and no force is applied to the system that would cause deforming.

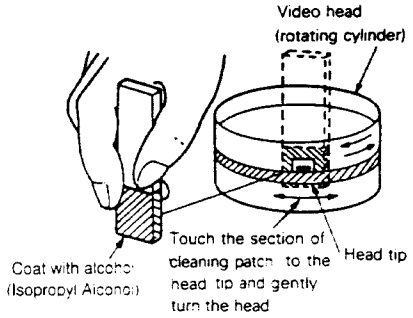

Video head
(rotating cylinder)
Coat with alcohol
(Isopropyl Alcohol)
Touch the section of cleaning patch to the head tip and gently turn the head
Head tip

Fig. C-10-1

5-2) Greasing

(1) Greasing guidelines

Apply grease, with a cleaning patch. Do not use excess grease. It may come into contact with the tape transport of drive system. Wipe any excess and clean with cleaning patch wetted in alcohol(Isopropyl Alcohol).

(2) Periodic greasing

Grease specified locations every 5,000hours.

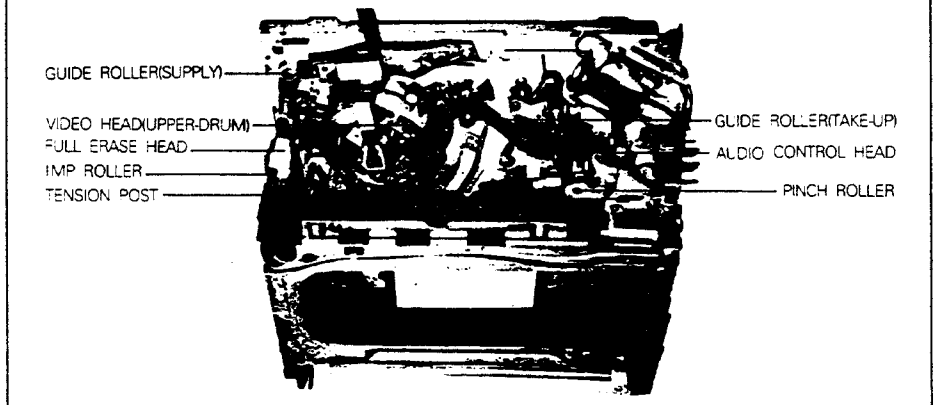


Fig. C-10-2 Tape Transport System

Phenomenon	Inspection	Replacement	
Color beats	Dirt on full-erase head	○	→ ①
Poor S/N no color	Dirt on video head	○	→ ②
Vertical jitter	Dirt on video head Dirt in tape transport system	○	→ ③
Low volume. Sound distorted	Dirt on audio/control head	○	→ ④
Tape does not run Tape is slack	Dirt on pinch roller	○	→ ⑤

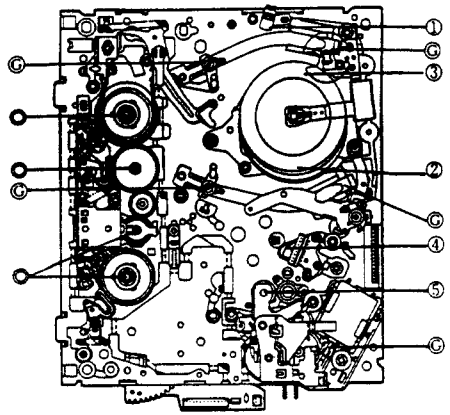


Fig. A-11 Top View of Mechanism

Phenomenon	Inspection Location	Replacement	
Do not fast forward or rewind, or rotation is slow Tape does not run Slack tape	Dirt on reel belt	○	→ ⑥

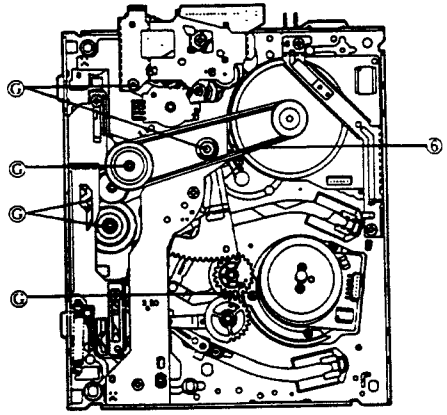


Fig. A-12 Bottom View of Mechanism

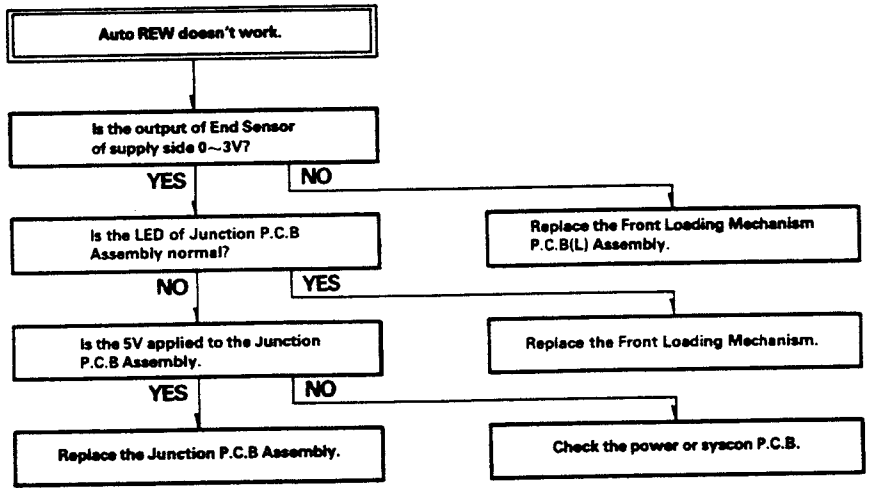
Ⓖ:Grease
Ⓞ:Oil

Note: If locations marked with ○ do not operate normally after cleaning, check for wear and replace.
See the EXPLODED VIEWS at the end of this manual as well as the above illustrations for the sections to be lubricated and greased.

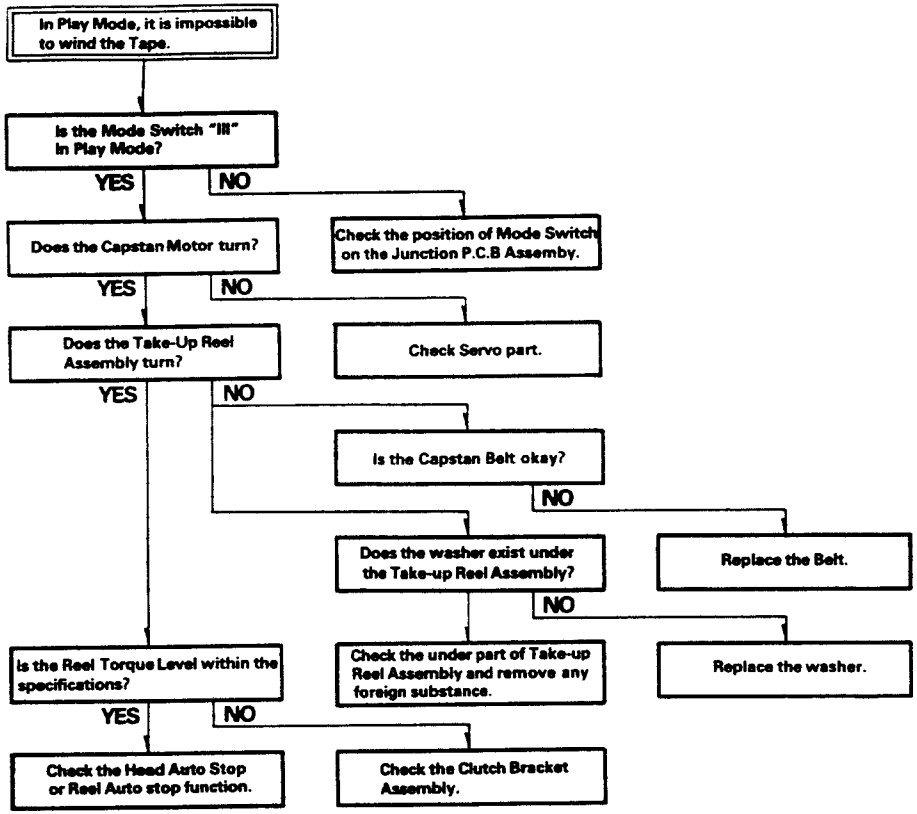
MECHANISM TROUBLESHOOTING GUIDE

1. Deck Mechanism

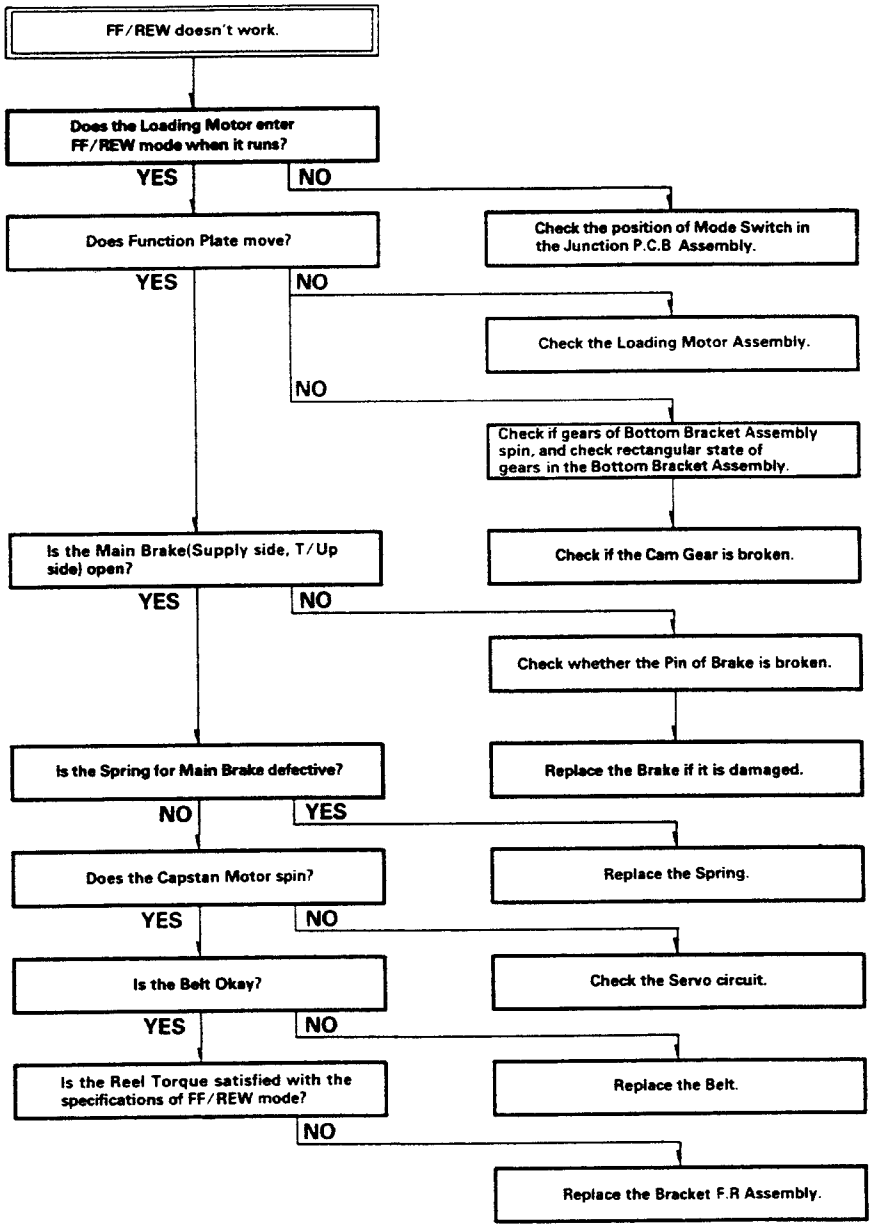
A.


Auto REW doesn't work.
Is the output of End Sensor of supply side 0~3V?
YES
NO
Is the LED of Junction P.C.B Assembly normal?
Replace the Front Loading Mechanism P.C.B(L) Assembly.
NO
YES
Is the 5V applied to the Junction P.C.B Assembly.
Replace the Front Loading Mechanism.
YES
NO
Replace the Junction P.C.B Assembly.
Check the power or sysconn P.C.B.

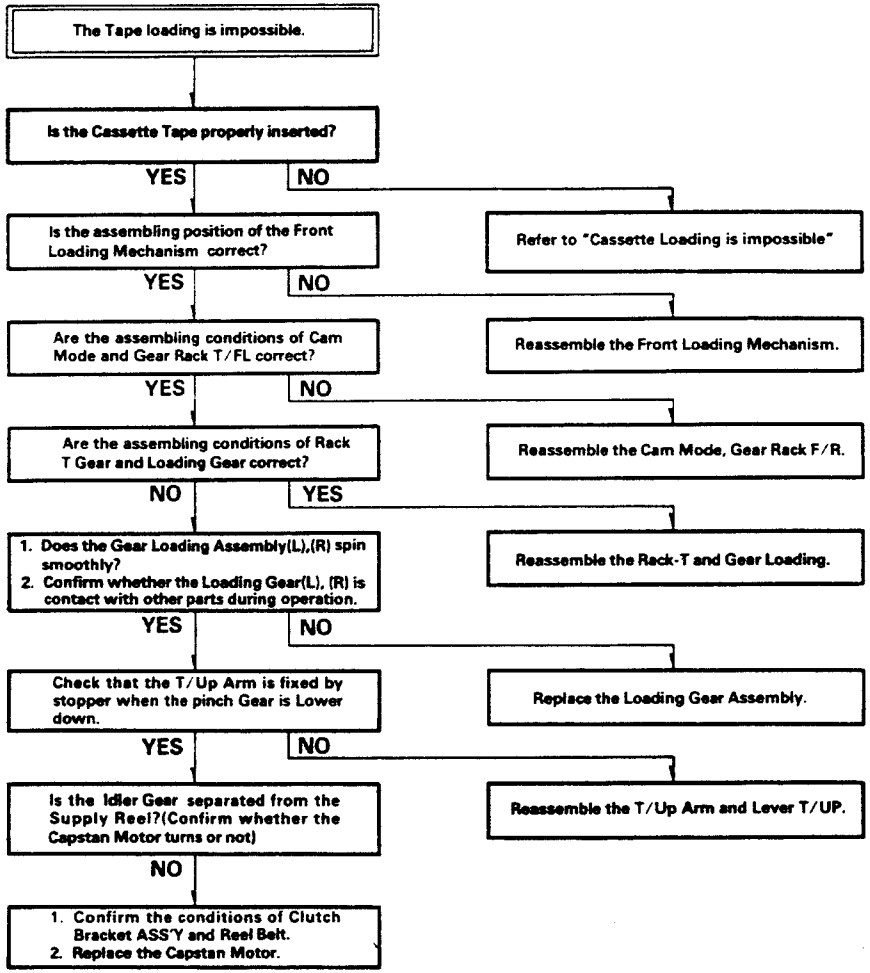
B.


In Play Mode, it is impossible to wind the Tape.
Is the Mode Switch "III" in Play Mode?
YES
NO
Check the position of Mode Switch on the Junction P.C.B Assemby.
Does the Capstan Motor turn?
YES
NO
Check Servo part.
Does the Take-Up Reel Assembly turn?
YES
NO
Is the Capstan Belt okay?
NO
Replace the Belt.
Does the washer exist under the Take-up Reel Assembly?
NO
Replace the washer.
Check the under part of Take-up Reel Assembly and remove any foreign substance.
Is the Reel Torque Level within the specifications?
YES
NO
Check the Clutch Bracket Assembly.
Check the Head Auto Stop or Reel Auto stop function.

C.

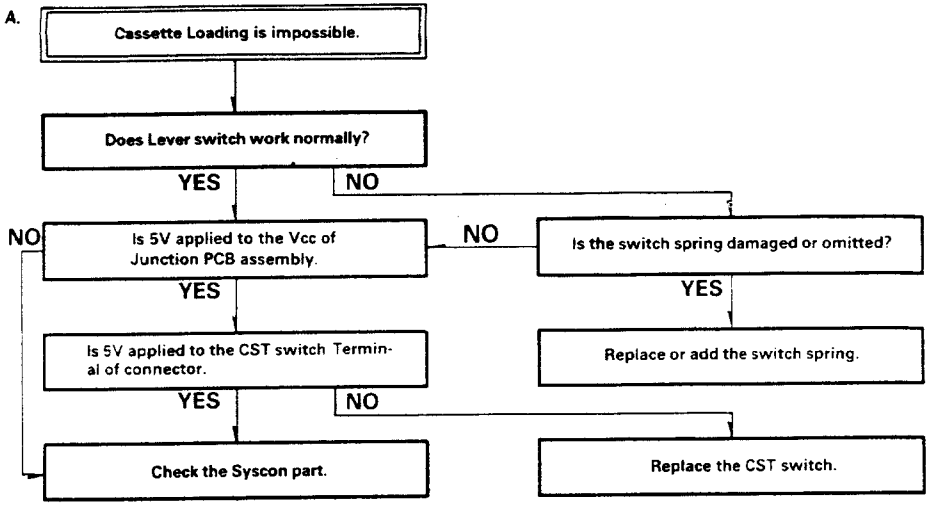

FF/REW doesn't work.
Does the Loading Motor enter FF/REW mode when it runs?
YES
NO
Check the position of Mode Switch in the Junction P.C.B Assembly.
Does Function Plate move?
YES
NO
Check the Loading Motor Assembly.
NO
Check if gears of Bottom Bracket Assembly spin, and check rectangular state of gears in the Bottom Bracket Assembly.
Is the Main Brake(Supply side, T/Up side) open?
YES
NO
Check if the Cam Gear is broken.
Check whether the Pin of Brake is broken.
Is the Spring for Main Brake defective?
NO
YES
Replace the Brake if it is damaged.
Replace the Spring.
Does the Capstan Motor spin?
YES
NO
Is the Belt Okay?
YES
NO
Check the Servo circuit.
Is the Reel Torque satisfied with the specifications of FF/REW mode?
NO
Replace the Belt.
Replace the Bracket F.R Assembly.

D.

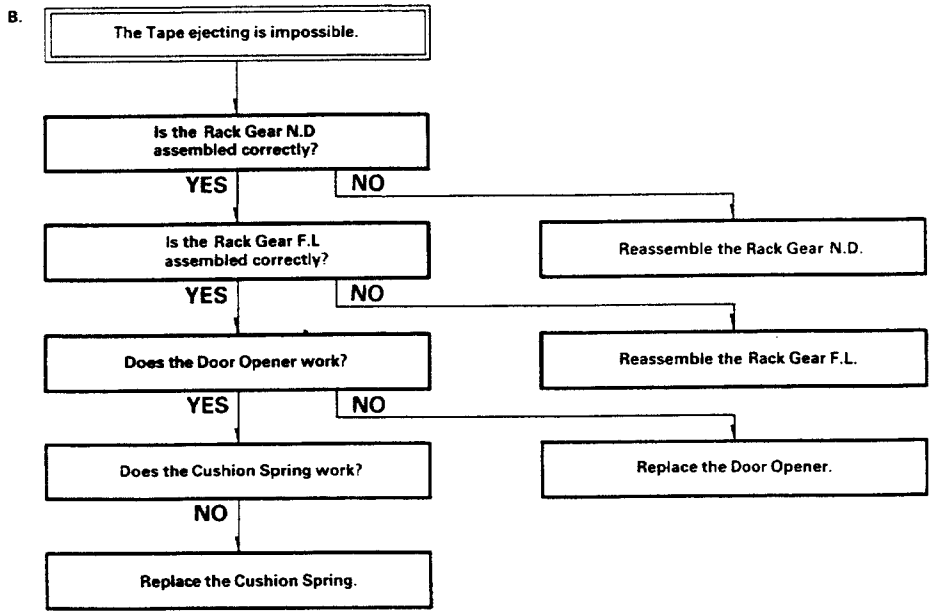

The Tape loading is impossible.
Is the Cassette Tape properly inserted?
YES
NO
Refer to "Cassette Loading is impossible"
Is the assembling position of the Front Loading Mechanism correct?
YES
NO
Reassemble the Front Loading Mechanism.
Are the assembling conditions of Cam Mode and Gear Rack T/FL correct?
YES
NO
Reassemble the Cam Mode, Gear Rack F/R.
Are the assembling conditions of Rack T Gear and Loading Gear correct?
NO
YES
Reassemble the Rack-T and Gear Loading.
1. Does the Gear Loading Assembly(L),(R) spin smoothly?
2. Confirm whether the Loading Gear(L), (R) is contact with other parts during operation.
YES
NO
Replace the Loading Gear Assembly.
Check that the T/Up Arm is fixed by stopper when the pinch Gear is Lower down.
YES
NO
Reassemble the T/Up Arm and Lever T/UP.
Is the Idler Gear separated from the Supply Reel?(Confirm whether the Capstan Motor turns or not)
NO
1. Confirm the conditions of Clutch Bracket ASS'Y and Reel Belt.
2. Replace the Capstan Motor.

2. Front Loading Mechanism

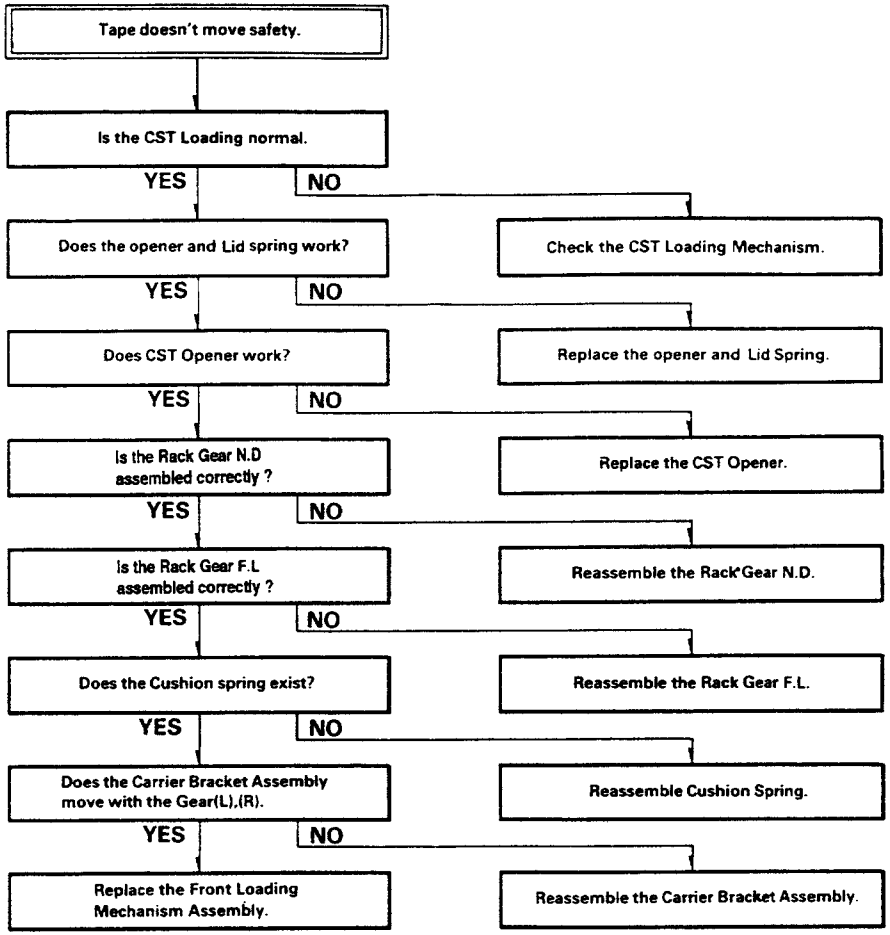
A.



B.



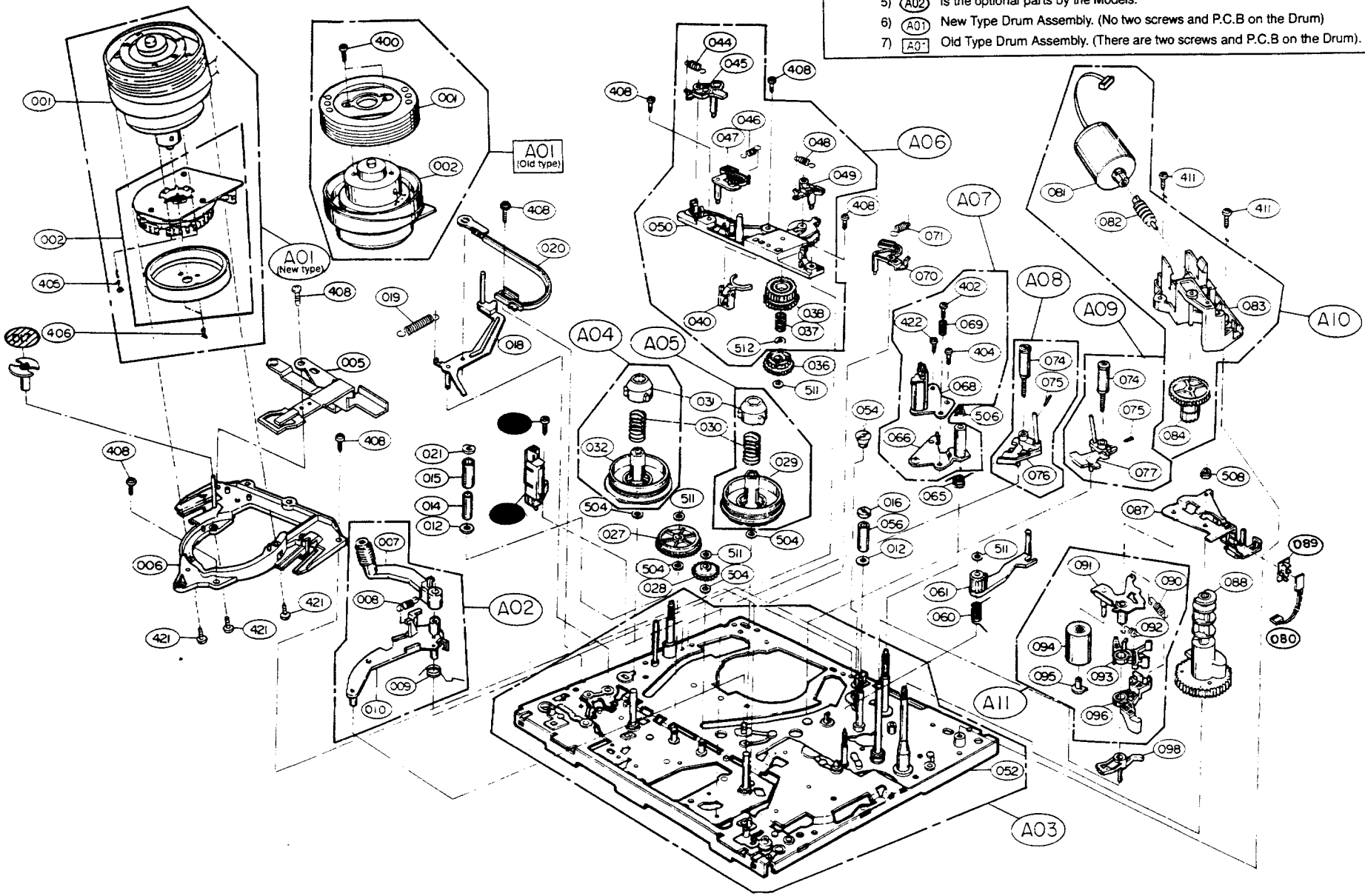
C.



EXPLODED VIEW

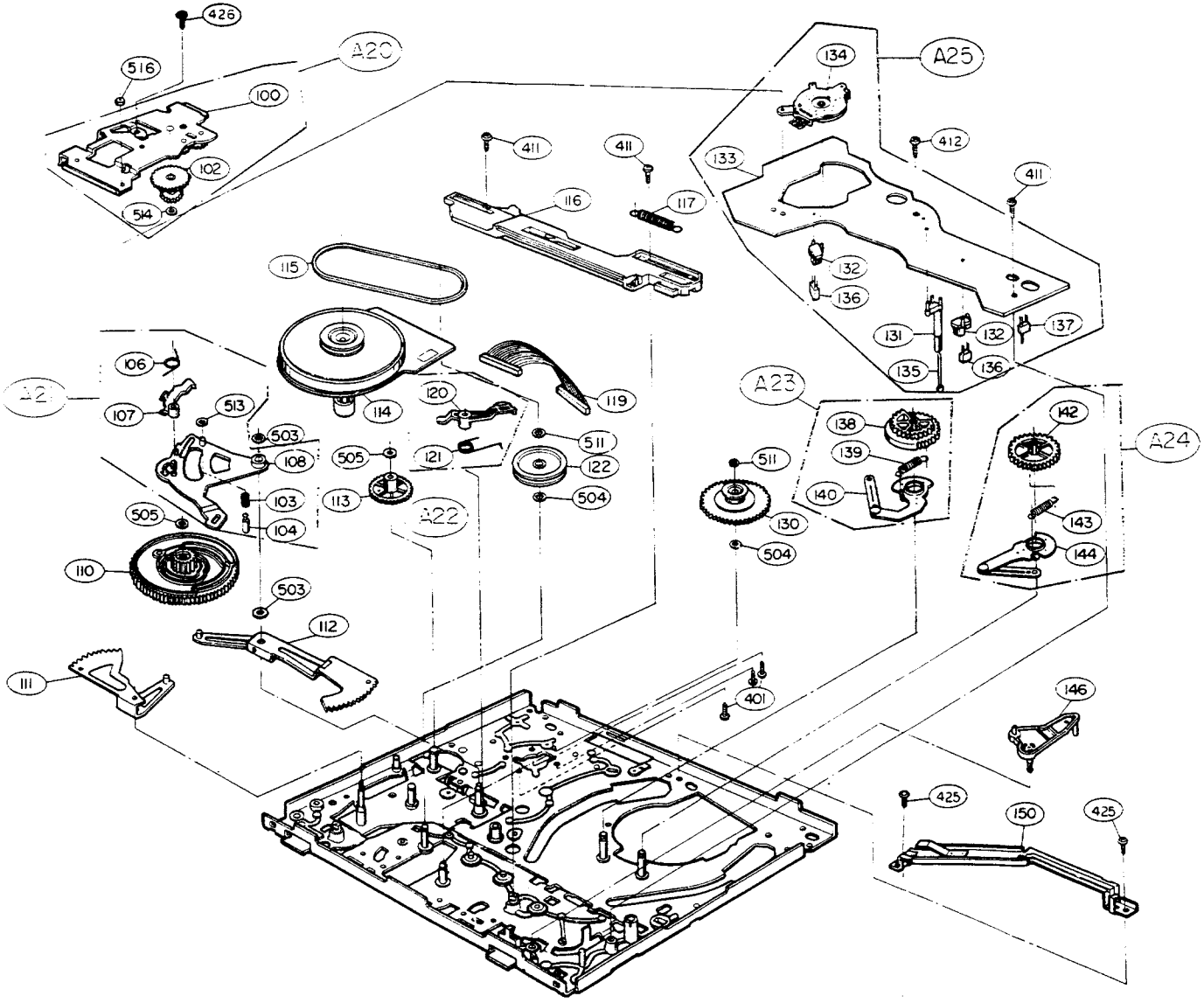
1. Moving Mechanism Section(I)

NOTE) 1) Refer to "SECTION 5 REPLACEMENT PARTS LIST" in order to look for the part number of each part.
2) ● marks the optional parts only in VCR (Video Cassette Recorder) Models.
3) marks the optional parts only in VCP (Video Cassette Player) Models.
4) ▨ marks the optional parts only in Hi-Fi Models.
5) (A02) is the optional parts by the Models.
6) (A01) New Type Drum Assembly. (No two screws and P.C.B on the Drum)
7) (A01') Old Type Drum Assembly. (There are two screws and P.C.B on the Drum).



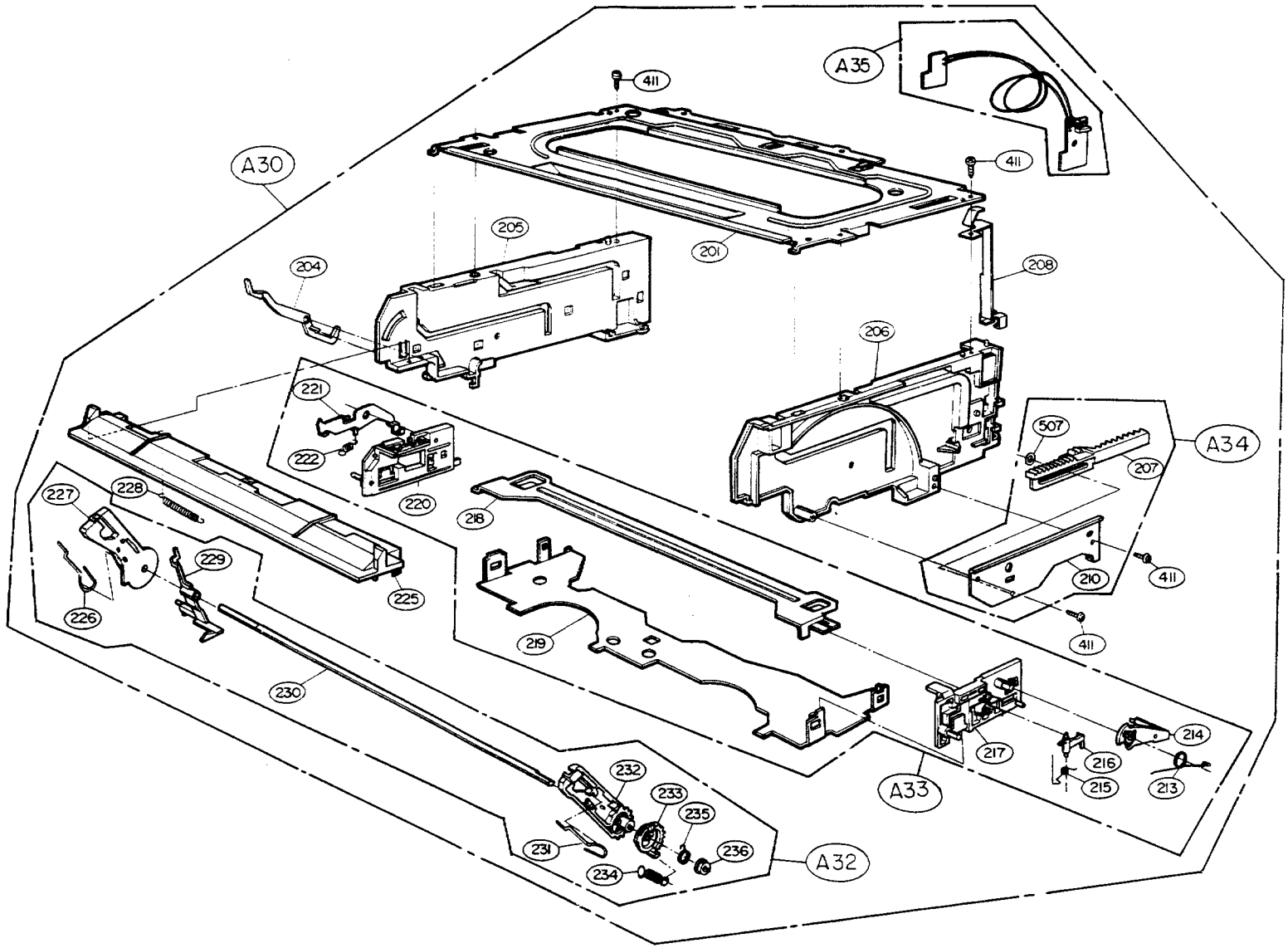
2. Moving Mechanism Section(Ⅱ)

NOTE) 1) Refer to "SECTION 5 REPLACEMENT PARTS LIST" in order to look for the part number of each part.
2) (119) is the optional parts by the Models.



3. Front Loading Mechanism Section

NOTE) 1) Refer to "SECTION 5 REPLACEMENT PARTS LIST" in order to look for the part number of each part.



SECTION 5 REPLACEMENT PARTS LIST

• Mechanical Section

RUN DATE : 95.05.12
NSP: Not Service Part

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
				ASSEMBLY PARTS SECTION		
		A00	412-124F	DECK	ASSY D-17 P (2HD VCR PAL NEW)	
	OR	A00	412C124F	DECK	AY D17P (2HD VCR PAL NEW S/J)	
	OR	A00	412W124F	DECK	AY D17P (2H VCR PAL NEW D/Y)	
	OR	A01	246-053T	LABEL	MAIN	
		A01	413-312A	DRUM	ASSY V-2CH(P1)	
	OR	A01	413B312A	DRUM	ASSY V-2CH(P1)(BOKWANG)	
		A02	386-296B	ARM	ASSY CL	
	OR	A03	311-005G	CHASSIS ASSY	D17	NSP
		A03	311-005M	CHASSIS ASSY	D17	NSP
		A04	456-048A	REEL	ASSY SUPPLY POM 7G	
		A05	456-045A	REEL	ASSY T/UP POM 7G	
		A06	321-397D	BRACKET	ASSY F/R	
		A07	225-228A	BASE	ASSY A/C	
	OR	A08	225-248A	BASE	ASSY P2	
		A08	225-248B	BASE	ASSY P2 (W-W)	
	OR	A09	225-249A	BASE	ASSY P3	
		A09	225-249B	BASE	ASSY P3 (W-W)	
		A10	414-104A	MOTOR	ASSY LOAD	
		A11	333-209E	LEVER	ASSY PINCH	
		A20	321-401A	BRACKET	ASSY BOTTOM	
		A21	333-208A	LEVER	ASSY RAT	
		A22	338-078A	BRAKE	ASSY CAP	
		A23	386-218A	ARM	ASSY LOAD(R)	
		A24	386-219A	ARM	ASSY LOAD(L)	
		A25	511-997D	PWB ASSY	D-17,VCR	
	OR	A30	219-017F	HOUSING	ASSY (D17)	
		A30	219-017L	HOUSING	ASSY (D17)	
		A32	435-257B	GEAR	ASSY DRIVE (HOOK ADDED)	
		A33	321-406A	BRACKET	ASSY CARRIER	
		A34	321-441A	BRACKET	ASSY SIDE	
		A35	515-106B	PWB ASSY	SENSOR	
				PARTS SECTION		
		001	413-315A	DRUM	SUB ASSY(P1)	
	OR	002	414-179A	MOTOR	ASSY DRUM SDV-202A(D-17) SONY	
	OR	002	414-180A	MOTOR	ASSY DRUM GVD-017(D-17) ALPS	
		002	414-211A	MOTOR	ASSY DRUM E20XL13 SANKYO METAL	
		005	225-231B	BASE	ASSY D-BRUSH	
	OR	006	225-220A	BASE	DRUM	NSP
		006	225-220B	BASE	DRUM (W-W)	NSP
	OR	006	225-220C	BASE	DRUM (Y-H)	NSP
		007	386-297A	ARM	SUB ASSY CU	
		008	442-460B	SPRING	CU	
		009	442-459A	SPRING	CL	
		010	386-295B	ARM	CL	
		012	384-071A	GUIDE	17	
		013	523-082B	HEAD	FE,HVFHF0010AK	
	OR	013	523-824A	HEAD	F.E MH-131G (D-17)	

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		014	378-017A	SLEEVE	P1	
		015	434-178A	ROLLER	P1	
	OR	015	434-178B	ROLLER	P1	
		016	389-003B	ADJUST	P(4)	
		018	386-205A	ARM	ASSY TENSION	
		019	442-331C	SPRING	TENSION	
		020	328-052B	BAND	ASSY TENSION	
		021	334-066A	STOPPER	P1	
		027	435-243A	GEAR	IDLE A POM 3G	
		028	435-244A	GEAR	IDLE B POM 3G	
		029	456-040A	REEL	T17	NSP
		030	442-341A	SPRING	REEL	NSP
		031	276-068A	CAP	REEL	NSP
		032	456-039A	REEL	S17	NSP
		036	435-240A	GEAR	F/R POM 3G	
		037	442-336A	SPRING	UP/D	NSP
		038	435-239A	GEAR	UP/D POM 3G	NSP
		040	333-201B	LEVER	ASSY F/R	NSP
		044	442-338B	SPRING	SSB	NSP
		045	338-081A	BRAKE	S-SOFT	NSP
		046	442-337A	SPRING	SMB	NSP
		047	338-080A	BRAKE	ASSY S-MAIN	NSP
		048	442-339D	SPRING	TSB	NSP
		049	338-083A	BRAKE	ASSY T-SOFT	NSP
		050	321-396A	BRACKET	SUB ASSY F/R	NSP
		054	389-013A	ADJUST	X-ASSY	
		056	378-018A	SLEEVE	P4	
		060	442-343A	SPRING	T/UP	
		061	386-387B	ARM	ASSY T/UP	
		065	442-332A	SPRING	A/C	
		066	225-219A	BASE	SUB ASSY A/C	NSP
		068	523-089A	HEAD	SUB ASSY A/C	
		069	442-362A	SPRING	AZIMUTH	
		070	338-085A	BRAKE	ASSY T-MAIN	
		071	442-344A	SPRING	TMB	
		074	434-173A	ROLLER	ASSY GUIDE	
		075	353-054B	SCREW	MINIATURE	
		076	225-226B	BASE	SUB ASSY SLALT (L,W-W)	
		077	225-225B	BASE	SUB ASSY SLALT (R,W-W)	
		081	414-105A	MOTOR	SUB ASSY,L	
		082	437-009A	WORM	ASSY	
		083	321-410A	BRACKET	SUB ASSY L/M	
		084	433-023A	WHEEL	WORM	
		087	321-470A	BRACKET	ASSY DEW	
		088	435-448A	GEAR	PINCH (N)	
		090	442-347A	SPRING	PINCH	NSP
		091	386-210A	ARM	ASSY PINCH	NSP
		092	442-346A	SPRING	STOPPER	NSP
		093	334-050C	STOPPER	PINCH	NSP
	OR	094	434-181A	ROLLER	ASSY PINCH	
		094	434-181B	ROLLER	PINCH D14 X L18	
		095	276-089B	CAP	PINCH	NSP
		096	333-203A	LEVER	PINCH	NSP
		098	333-344A	LEVER	T-UP (N)	
		100	321-463A	BRACKET	SUB ASSY B	NSP

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		102	435-249A	GEAR	RAT1	NSP
		103	442-356A	SPRING	F-LEVER	NSP
		104	356-208A	PIN	F-LEVER	NSP
		106	442-345A	SPRING	RAT	NSP
		107	333-202A	LEVER	RAT	NSP
		108	333-207A	LEVER	F17	NSP
		110	374-005A	CAM	D17 POM 10G	
		111	435-318A	GEAR	ASSY RACK F/L	
		112	435-291A	GEAR	ASSY RACK T	
		113	435-246A	GEAR	PC POM 3G	
		114	414-120B	MOTOR	CAPSTAN GVC-017P	
		115	452-047A	BELT	CENTER D71.9 X SQRT2.0	
		116	256-734A	PLATE	F17	
		117	442-342B	SPRING	FP	
		120	338-089A	BRAKE	SUB ASSY CAP	
		121	442-333A	SPRING	CAPSTAN	
		122	432-038A	PULLEY	GEAR POM 3G	
		130	337-005A	CLUTCH	ASSY POM 7G FELT 20X1X1T 2EA	
		131	340-001A	HOLDER	LED (Q)	
		132	324-642A	HOLDER	R/S	
		133	513-494D	PWB	JUNCTION D-17 VCR	NSP
		134	556-133A	SWITCH	MODE	
	OR	134	556-133B	SWITCH	MODE, ALPS	
	OR	135	0DL451000AA	DIODE LED	IR SENSOR GL451(LONG) SHARP	
		135	0DL550000AB	DIODE LED	IR SENSOR EL-55L(LONG) KOC	
		136	657-102K	SENSOR	SG-105(REEL) D-16 KOC	
		137	556-131A	SWITCH	ESE-105SV1	
		138	435-234A	GEAR	LOAD(R)	
		139	442-330A	SPRING	LOADING	
		140	386-274A	ARM	SUB ASSY (R)	
		142	435-235A	GEAR	LOAD(L)	
		143	442-330B	SPRING	LOADING	
		144	386-273A	ARM	SUB ASSY (L)	
		146	333-218A	LEVER	ASSY A-TEN	
		150	321-527A	BRACKET	ASSY C-GUIDE	
		201	256-934B	PLATE	TOP	
		204	465-026A	OPENER	DOOR	
		205	321-517B	BRACKET	LEFT (D17)	
		206	321-518A	BRACKET	RIGHT (D17)	
		207	435-278A	GEAR	RACK N/D	
		208	256-910A	PLATE	GND TOP	
		210	321-440A	BRACKET	SIDE	
		213	442-351A	SPRING	OC	NSP
		214	465-028A	OPENER	CST	NSP
		215	442-357A	SPRING	RID	NSP
		216	465-027A	OPENER	RID	NSP
		217	324-647A	HOLDER	R	NSP
		218	321-407A	BRACKET	SUPPORT	NSP
		219	321-405A	BRACKET	CARRIER	NSP
		220	324-646A	HOLDER	L	NSP
		221	333-210A	LEVER	DT	NSP
		222	442-358B	SPRING	DT	NSP
		225	384-074A	GUIDE	CST	
		226	442-352A	SPRING	L	NSP
		227	435-254A	GEAR	L	NSP

RUN DATE : 95.05.12
NSP: Not Service Part

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		228	442-350A	SPRING	S/W	
		229	333-204A	LEVER	S/W	NSP
		230	423-368A	SHAFT	D	NSP
		231	442-353A	SPRING	R	NSP
		232	435-255A	GEAR	R	NSP
		233	435-256B	GEAR	C (HOOK ADDED)	NSP
		234	442-359C	SPRING	CUSHION (D17F/L)	NSP
		235	442-354A	SPRING	CC	NSP
		236	276-086A	CAP	DRIVE	NSP
				SCREW		
		401	1MPC0262018	PAN HEAD MACHINE SCREW +	D 2.6 L 6.0 MSWR3/FZY	
		402	353-021D	SCREW	SPECIAL	
		404	353-048C	SCREW	CONE POINT 3X10	
		405	1MDC0262818	PAN HEAD MACHINE SCREW P/WASH-	D2.6 L12 MSWR3/FZY	
		406	1MEC0302018	PAN HEAD MACHINE SCREW S/W -	D 3.0 L 6.0 MSWR3/FZY	
		408	1MBC0302418	BINDING HEAD MACHINE SCREW -	D 3.0 L 8.0 MSWR3/FZY	
		411	353-046B	SCREW	SPECIAL (3X8 FZMY)	
		412	1MBC0302818	BINDING HEAD MACHINE SCREW -	D 3.0 L 12 MSWR3/FZY	
		421	1MPC0302618	PAN HEAD MACHINE SCREW +	D3.0 L10.0,MSWR3/FZY	
		422	1MPC0302418	PAN HEAD MACHINE SCREW +	D 3.0 L 8.0 MSWR3/FZY	
		425	1SRF0302418	BRAIZER HD TAP TITE SCREW +	D 3.0 L 8.0 MSWR3/FZY	
		426	1MPC0302018	PAN HEAD MACHINE SCREW +	D 3.0 L 6.0 MSWR3/FZY	
				NUT, WASHER		
		503	354-020E	WASHER	STOPPER	
		504	354-001B	WASHER	P.S D3.1XD6X0.5T	
		505	354-080E	WASHER	STOPPER	
		506	352-025A	NUT	NYLON M3	
		507	354-020J	WASHER	STOPPER(2.6X4.8X0.5)	
		508	352-033A	NUT	NUT NYLON(M3)	
		511	354-080C	WASHER	STOPPER	
		512	354-080E	WASHER	STOPPER	NSP
		513	354-080A	WASHER	STOPPER	NSP
		514	354-080B	WASHER	STOPPER	NSP
		516	354-033B	WASHER	STOPPER	

• Cabinet & Main Frame Section

RUN DATE 95.05.12
NSP: Not Service Part

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
				ASSEMBLY PARTS SECTION		
		A41	3501R-0010C	BOARD ASSY	KEY BOARD	
		A42	3501R-0009C	BOARD ASSY	TIMER	
		A43	258-672S	PANEL	ASSY FRONT(QUISY 35)	
		A44	501-025B	MODULE	SMPS,NARROW	
		A45	3501R-0317A	BOARD ASSY	PRE-AMP (2HD MONO)	
		A46	3501R-0313D	BOARD ASSY	MAIN	
		A47	3501R-0007K	BOARD ASSY	Y/C	
		A48	3501R-0016D	BOARD ASSY	BS BOARD	
				PARTS SECTION		
		250	217-517A	CASE	TOP	
		260	315-328A	FRAME	MAIN	NSP
		262	255-313A	PLATE	DRUM GND	NSP
		263	255-312A	PLATE	SIDE GND	NSP
		264	255-315A	PLATE	DECK GND	NSP
		265	477-034B	RUBBER	BUMPON	NSP
		268	321-532A	BRACKET	HOUSING	
		274	324-970A	HOLDER	LED	
		275	324-883A	HOLDER	DIGITRON	
		277	273-275A	KNOB	SHUTTLE	
		280	258-671K	PANEL	FRONT(QUISY 35)	NSP
		282	221-986S	COVER	ASSY DOOR (QUISY 35)	
		283	226-079U	DOOR	CST	
		284	442-469A	SPRING	DOOR	
		285	524-007N	MAGNET	ASSY DOOR	
		286	435-465C	GEAR	ASSY DAMPER(T:80)	
		287	321-679A	BRACKET	DOOR	
	OR	300	681-051B	CORD	KKP-419J/B-172, KLCE-2F	
		300	681-251B	CORD	EP-11N.LTFE-2F(SANGNONG)	
		320	258-685U	PANEL	ASSY DISTRIBUTOR(BF204P)	
		321	258-686F	PANEL	ASSY BS(SAT)	
		322	255-236A	PLATE	JACK PROTECT	NSP
		323	255-003F	PLATE	HEAT SINK ASSY BS	NSP
		330	221-948A	COVER	BOTTOM	
		331	879-019E	WIRE FLAT	FFC 23-100 (P-1.25) GSC	
	OR	331	879-020E	WIRE FLAT	BNCD-P 1.25-K-23-100	
				SCREW		
		452	353-051A	SCREW	SPECIAL	
		459	353-046A	SCREW	SPECIAL (3X6 FZMY)	
		462	353-136A	SCREW	SPECIAL(FBK) (353S353A)	
		463	1MBC0302418	BINDING HEAD MACHINE SCREW +	D 3.0 L 8.0 MSWR3/FZY	

• Packing Accessory Section

RUN DATE : 95.05.12
NSP: Not Service Part

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		801	480-475X	INSTRUCTION ASSY		
		802	290-359A	BOX CARTON		
		803	283-260A	PACKING	E,PS	
		804	291-002B	SHEET CUSHION		NSP
		808	534-008C	BATTERY	AAAM(R03) 1.5V 1PAIR(LOCAL)	
		810	861-505J	CABLE SET ASSY	RF-CABLE ASSY PAL FTZ	

• Remote Control Section

RUN DATE : 95.05.12
NSP: Not Service Part

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		900	597-112N	REMOTE CONTROL	R/C ASSY	
		901	221-817A	COVER	DOOR R/C	
		902	255-344K	PLATE	TOP R/C	
		903	217-551G	CASE	TOP R/C 94PAL W/D	
		904	556-254E	SWITCH	RUBBER A R/C 94PAL	
		905	515-702K	PWB ASSY	R/C (W/DOOR PAL)	
		906	236-452A	WINDOW	FILTER	
		907	221-815A	COVER	BOTTOM R/C	
		908	221-816A	COVER	BATTERY	
		909	442-582B	SPRING	BATTERY 'A'	
		914	556-255J	SWITCH	RUBBER B R/C	
		916	1TPH0202016	PAN HEAD TAPPING SCREW + 2	D 2.0 L 6.0 MSWR3/(BK)	

• Fixture Section

RUN DATE : 95.05.12
NSP: Not Service Part

S	AL	LOCA.NO	PART NO(GS)	DESCRIPTION	SPECIFICATION	REMARKS
		FIX	960-015N	FIXTURE	SVC FIXTURE	
		FIX1	232-972A	BOARD ASSY	SVC FIXTURE	
		FIX2	6871R-0233A	PWB ASSY	SVC-FIXTURE(MAIN TO PRE-AMP)	
		FIX3	6871R-0233B	PWB ASSY	SVC-FIXTURE(Y/C TO PRE-AMP)	
		FIX4	6871R-0233C	PWB ASSY	SVC-FIXTURE(Y/C TO POWER)	

• Electrical Section

RUN DATE : 95.05.12

CAUTION: The * marks in the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. Before replacing any of these components, read carefully the SAFETY PRECAUTIONS and SERVICING PRECAUTIONS in the manual. Do not degrade the safety of the unit through improper servicing.

Tolerance

Symbol	C	J	K	M	N	Z	P	A
%	±2	±5	±10	±20	±30	+80 −20	+100 −10	+100 −10

CC, CJ, CK: Capacitor, Ceramic
CE: Capacitor, Electrolytic
CQ: Capacitor, Polyester

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
				CAPACITOR
		C004	0CE1074F638	100U SRA 16V M FM5 TP(5)
		C006	0CE4756F638	47M SMS 16V M FM5 TP5
		C008	0CN2230H948	0.022M 25V Z F TA26
		C009	0CE4756F638	47M SMS 16V M FM5 TP5
		C010	0CC1000K115	10P 50V D NP0 TS
		C011	0CC1200K415	12P 50V J NP0 TS
		C013	0CC0300K015	3P 50V C NP0 TS
		C014	0CC3900K415	39P 50V J NPO TP
		C015	0CN1010K518	100P 50V K B TA25
		C016	0CN1040K948	0.1M 50V Z F TA26
		C017	0CE4766F638	47M SMS 16V M FM5 TP5
		C019	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C020	0CQ6811N449	680P 100V J PYLN TP
		C021	0CQ6821N409	0.0068U 100V J POLY TP
		C022	0CE2274F638	220M SRA 16V M FM5 TP(5)
		C023	0CN2230H948	0.022M 25V Z F TA26
		C024	0CQ3321N409	0.0033U 100V J POLY TP
		C025	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C026	0CN1040K948	0.1M 50V Z F TA26
		C027	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C028	0CN1010K518	100P 50V K B TA26
		C050	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C060	0CN1010K518	100P 50V K B TA26
		C061	0CN1010K518	100P 50V K B TA26
		C062	0CC4700K415	47P 50V J NP0 TP
		C063	0CN2230H948	0.022M 25V Z F TA26
		C065	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C066	0CE4766F638	47M SMS 16V M FM5 TP5
		C067	0CN2230H948	0.022M 25V Z F TA26
		C070	0CN2230H948	0.022M 25V Z F TA26
		C071	0CE1076F638	100M SMS 16V M FM5 TP(5)
		C072	0CN1040K948	0.1M 50V Z F TA26
		C201	0CQ4731N409	0.047U 100V J POLY TP
		C202	0CQ4731N409	0.047U 100V J POLY TP
		C203	0CE1054K636	1.0U SRA 50V M FM5 BP TP(D)
		C204	0CE1056H638	10M SMS 25V M FM5 TP
		C205	0CE1056H638	10M SMS 25V M FM5 TP
		C206	0CE4756K638	4.7M SMS 50V M FM5 TP(5)
		C207	0CE4756K638	4.7M SMS 50V M FM5 TP(5)
		C208	0CE1054K636	1.0U SRA 50V M FM5 BP TP(D)
		C209	0CQ1221N409	0.0012U 100V J POLY TP
		C210	0CQ1021N409	0.001U 100V J POLY TP
		C211	0CE4766H638	47M SMS 25V M FM5 TP5

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		C212	0CE1066H638	10M SMS 25V M FM5 TP
		C213	0CC1510K415	150P 50V J NPC TS
		C214	0CC1210K415	120PF 50V J CH FM/SMM
		C215	0CE4756K638	4.7M SMS 50V M FM5 TP(5)
		C219	0CE4774F638	470M SRA 16V M FM5 TP(5)
		C220	0CE4774F638	470M SRA 16V M FM5 TP(5)
		C221	0CN2230H948	0.022M 25V Z F TA26
		C228	0CE4744K638	0.47M SRA 50V M FM5 TP(5)
		C229	0CN2230H948	0.022M 25V Z F TA26
		C230	0CN2230H948	0.022M 25V Z F TA26
		C231	0CE1044K638	0.1M SRA 50V M FM5 TP(5)
		C233	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C234	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C235	0CK4730K945	0.047U 50V Z F TS
		C237	0CN1010K518	100P 50V K B TA26
		C238	0CN1010K518	100P 50V K B TA26
		C239	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C242	0CQ2731N409	0.027U 100V J POLY TP
		C2A1	0CE4774F638	470M SRA 16V M FM5 TP(5)
		C2A2	0CN2230H948	0.022M 25V Z F TA26
		C302	0CN1030F678	0.01M 16V M Y TA26
		C303	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C304	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C305	0CX2700K408	27P 50V J SL TA26
		C306	0CX6800K408	68P 50V J SL TA26
		C307	0CX2200K408	22P 50V J SL TP26
		C309	0CN3910K518	390P 50V K B TA25
		C310	0CX4700K408	47P 50V J SL TA26
		C311	0CN4730K948	0.047M 50V Z F TA26
		C312	0CN1040K948	0.1M 50V Z F TA26
		C313	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C314	0CN1030F678	0.01M 16V M Y TA26
		C315	0CE1065F636	10UF SMS 16V M FM5 BP(D) TP
		C316	0CN2230H948	0.022M 25V Z F TA26
		C317	0CE2274C638	220M SRA 6.3V M FM5 TP(5)
		C318	0CE1064F638	10M SRA 16V M FM5 TP(5)
		C319	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C320	0CN1030F678	0.01M 16V M Y TA26
		C321	0CN4730K948	0.047M 50V Z F TA26
		C322	0CN2230H948	0.022M 25V Z F TA26
		C323	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C324	0CN4730K948	0.047M 50V Z F TA26
		C325	0CN2230H948	0.022M 25V Z F TA26
		C326	0CE2274C638	220M SRA 6.3V M FM5 TP(5)
		C327	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		C328	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C329	0CN2230H948	0.022M 25V Z F TA26
		C330	0CN2230H948	0.022M 25V Z F TA26
		C332	0CN4730K948	0.047M 50V Z F TA26
		C334	0CN1030F678	0.01M 16V M Y TA26
		C335	0CN2230H948	0.022M 25V Z F TA26
		C336	0CN1040K948	0.1M 50V Z F TA26
		C337	0CE4756F638	47M SMS 16V M FM5 TP5
		C338	0CN2230H948	0.022M 25V Z F TA26
		C339	0CN1030F678	0.01M 16V M Y TA26
		C341	0CN2230H948	0.022M 25V Z F TA26
		C342	0CE4756F638	47M SMS 16V M FM5 TP5
		C343	0CN1810K518	180P 50V K B TA26
		C344	0CN1040K948	0.1M 50V Z F TA26
		C345	0CN2230H948	0.022M 25V Z F TA26
		C348	0CN2230H948	0.022M 25V Z F TA26
		C349	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C350	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C351	0CN1030F678	0.01M 16V M Y TA26
		C352	0CN1030F678	0.01M 16V M Y TA26
		C353	0CN1040K948	0.1M 50V Z F TA26
		C354	0CN2230H948	0.022M 25V Z F TA26
		C355	0CE4764F638	47M SRA/SS 16V M FM5 TP(5)
		C358	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C359	0CN1030F678	0.01M 16V M Y TA26
		C361	0CE4756F638	47M SMS 16V M FM5 TP5
		C362	0CN1040K948	0.1M 50V Z F TA26
		C363	0CN2230H948	0.022M 25V Z F TA26
		C364	0CN2230H948	0.022M 25V Z F TA26
		C365	0CE4764F638	47M SRA/SS 16V M FM5 TP(5)
		C366	0CE4756F638	47M SMS 16V M FM5 TP5
		C367	0CE2264F638	22M SRA 16V M FM5 TP(5)
		C368	0CN1040K948	0.1M 50V Z F TA26
		C371	0CN1040K948	0.1M 50V Z F TA26
		C390	0CN1210K518	120P 50V K B TA26
		C391	0CE4754K638	4.7M SRA 50V M FM5 TP(5)
		C3A1	0CN1030F678	0.01M 16V M Y TA26
		C3A2	0CE3364F638	33M SRA 16V M FM5 TP(5)
		C3A4	0CN1030F678	0.01M 16V M Y TA26
		C3A5	0CC8200K415	82P 50V J NP0 TP
		C3A6	0CQ6831N409	0.068U 100V J POLY TP
		C3A7	0CE4756F638	47M SMS 16V M FM5 TP5
		C3A9	0CE4764F638	47M SRA/SS 16V M FM5 TP(5)
		C3C1	0CN2230H948	0.022M 25V Z F TA26
		C3C2	0CN1030F678	0.01M 16V M Y TA26
		C3C3	0CN1030F678	0.01M 16V M Y TA26
		C3T1	0CE4764K638	47M SRA 50V M FM5 TP(5)
		C3T2	0CE4764K638	47M SRA 50V M FM5 TP(5)
		C402	0CE1066H638	10M SMS 25V M FM5 TP
		C403	0CE3364F638	33M SRA 16V M FM5 TP(5)
		C405	0CE2264F638	22M SRA 16V M FM5 TP(5)
		C406	0CQ1031N409	0.01UF 100V J PE TP
		C407	0CE4766F638	47M SMS 16V M FM5 TP5
		C408	0CE1076F638	100M SMS 16V M FM5 TP(5)
		C412	0CE2254K638	2.2M SRA 50V M FM5 TP(5)
		C414	0CE1066H638	10M SMS 25V M FM5 TP
		C415	0CE4766F638	47M SMS 16V M FM5 TP5
		C416	0CE1066H638	10M SMS 25V M FM5 TP
		C417	0CN1030F678	0.01M 16V M Y TA26
		C418	0CQ1231N409	0.012U 100V J POLY TP
		C419	0CQ1031N409	0.01UF 100V J PE TP
		C421	0CE4754K638	4.7M SRA 50V M FM5 TP(5)

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		C422	0CE1066H636	10M SMS 25V M FM5 TP
		C423	0CE4766F638	47M SMS 16V M FM5 TP5
		C432	0CN1030F678	0.01M 16V M Y TA26
		C451	0CQ1031N409	0.01UF 100V J PE TP
		C452	0CQ1031N409	0.01UF 100V J PE TP
		C453	0CQ5631N409	0.056U 100V J POLY TP
		C454	0CN1030F678	0.01M 16V M Y TA26
		C455	0CE4766F638	47M SMS 16V M FM5 TP5
		C466	0CN2210K518	220P 50V K B TA26
		C4A1	0CN1030F678	0.01M 16V M Y TA26
		C4A2	0CN1030F678	0.01M 16V M Y TA26
		C4A4	0CE4766F638	47M SMS 16V M FM5 TP5
		C4A5	0CE4766F638	47M SMS 16V M FM5 TP5
		C4A6	0CN1030F678	0.01M 16V M Y TA26
		C4A7	0CN1030F678	0.01M 16V M Y TA26
		C4A8	0CE4766F638	47M SMS 16V M FM5 TP5
		C4A9	0CE1066H638	10M SMS 25V M FM5 TP
		C4C2	0CE4766F638	47M SMS 16V M FM5 TP5
		C4C3	0CN1030F678	0.01M 16V M Y TA26
		C4C4	0CE1066H638	10M SMS 25V M FM5 TP
		C4C5	0CE1066F636	10UF SMS 16V M FM5 BP(D) TP
		C4C6	0CX4700K408	47P 50V J SL TA26
		C4C9	0CE1066H638	10M SMS 25V M FM5 TP
		C501	624-027A	GOLD 0.047F-5.5V D13.0X8.5 NEC
		C502	0CE1054K636	1.0U SRA 50V M FM5 BP TP(D)
		C503	0CN1030F678	0.01M 16V M Y TA26
		C504	0CN1030F678	0.01M 16V M Y TA26
		C505	0CN1030F678	0.01M 16V M Y TA26
		C506	0CN1020K518	1000P 50V K B TA26
		C507	0CN2230H948	0.022M 25V Z F TA26
		C508	0CE1076F638	100M SMS 16V M FM5 TP(5)
		C509	0CN1030F678	0.01M 16V M Y TA26
		C510	0CN2230H948	0.022M 25V Z F TA26
		C511	0CE1076F638	100M SMS 16V M FM5 TP(5)
		C512	0CN1020K518	1000P 50V K B TA26
		C513	0CN1020K518	1000P 50V K B TA26
		C514	0CN1020K518	1000P 50V K B TA26
		C515	0CN1030F678	0.01M 16V M Y TA26
		C516	0CN1030F678	0.01M 16V M Y TA26
		C517	0CN2230H948	0.022M 25V Z F TA26
		C518	0CE4766F638	47M SMS 16V M FM5 TP5
		C519	0CN2230H948	0.022M 25V Z F TA26
		C520	0CE4754K638	4.7M SRA 50V M FM5 TP(5)
		C521	0CC2400K415	24P 50V J NP0 TP
		C522	0CC2200K415	22P 50V J NP0 TS
		C523	0CN1040K948	0.1M 50V Z F TA26
		C524	0CN4730K948	0.047M 50V Z F TA26
		C526	0CE1076F638	100M SMS 16V M FM5 TP(5)
		C527	0CE4766F638	47M SMS 16V M FM5 TP5
		C528	0CN1020K518	1000P 50V K B TA26
		C552	0CN2230H948	0.022M 25V Z F TA26
		C553	0CE4766F638	47M SMS 16V M FM5 TP5
		C701	0CN2230H948	0.022M 25V Z F TA26
		C702	0CE4766F638	47M SMS 16V M FM5 TP5
		C703	0CE4756K638	4.7M SMS 50V M FM5 TP(5)
		C704	0CN2230H948	0.022M 25V Z F TA26
		C707	0CE4766F638	47M SMS 16V M FM5 TP5
		C708	0CE4766F638	47M SMS 16V M FM5 TP5
		C709	0CN2230H948	0.022M 25V Z F TA26
		C710	0CE4756K638	4.7M SMS 50V M FM5 TP(5)
		C712	0CN1040K948	0.1M 50V Z F TA26
		C713	0CC4710K405	470P 50V J SL TP

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		C714	0CN1040K948	0.1M 50V Z F TA26
		C715	0CE4766F638	47M SMS 16V M FM5 TP5
		C716	0CN1040K948	0.1M 50V Z F TA26
		C717	0CE4766F638	47M SMS 16V M FM5 TP5
		C718	0CN2230H948	0.022M 25V Z F TA26
		C719	0CN1040K948	0.1M 50V Z F TA26
		C737	0CN1040K948	0.1M 50V Z F TA26
		C757	0CN2230H948	0.022M 25V Z F TA26
		C758	0CE4766F638	47M SMS 16V M FM5 TP5
		C759	0CN2230H948	0.022M 25V Z F TA26
		C760	0CN1040K948	0.1M 50V Z F TA26
		C761	0CE4766F638	47M SMS 16V M FM5 TP5
		C762	0CE4766F638	47M SMS 16V M FM5 TP5
		C763	0CX4700K408	47P 50V J SL TA26
		C764	0CE4766F638	47M SMS 16V M FM5 TP5
		C765	0CE4766F638	47M SMS 16V M FM5 TP5
		C766	0CE4766F638	47M SMS 16V M FM5 TP5
		C767	0CN2230H948	0.022M 25V Z F TA26
		C768	0CN2230H948	0.022M 25V Z F TA26
		C770	0CX4700K408	47P 50V J SL TA26
		C771	0CE1064H638	10M SRA 25V M FM5 TP(5)
		C785	0CN2230H948	0.022M 25V Z F TA26
		C786	0CC2200K415	22P 50V J NP0 TS
		C790	0CN2230H948	0.022M 25V Z F TA26
		C791	0CE4766F638	47M SMS 16V M FM5 TP5
		C792	0CN2230H948	0.022M 25V Z F TA26
		C793	0CE4754K638	4.7M SRA 50V M FM5 TP(5)
		C794	0CE4774F638	470M SRA 16V M FM5 TP(5)
		C795	0CN2230H948	0.022M 25V Z F TA26
		C801	0CN1030F678	0.01M 16V M Y TA26
		C803	0CN1030F678	0.01M 16V M Y TA26
		C804	0CN1030F678	0.01M 16V M Y TA26
		C805	0CX3300K408	33P 50V J SL TA26
		C806	0CN2230H948	0.022M 25V Z F TA26
		C807	0CE4764F638	47M SRA/SS 16V M FM5 TP(5)
		C808	0CN1030F678	0.01M 16V M Y TA26
		C810	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		C811	0CN1030F678	0.01M 16V M Y TA26
		C812	0CN1030F678	0.01M 16V M Y TA26
		C813	0CN1030F678	0.01M 16V M Y TA26
		C814	0CN1030F678	0.01M 16V M Y TA26
		C817	0CN1030F678	0.01M 16V M Y TA26
		C818	0CN3310K518	330P 50V K B TA26
		C819	0CN8200K518	82PF 50V K B TA26
		C821	0CN1030F678	0.01M 16V M Y TA26
		C822	0CX3900K408	39P 50V J SL TA26
		C823	0CN2230H948	0.022M 25V Z F TA26
		C824	0CE4764F638	47M SRA/SS 16V M FM5 TP(5)
		C825	0CN1030F678	0.01M 16V M Y TA26
		C826	0CX3300K408	33P 50V J SL TA26
		C827	0CN1030F678	0.01M 16V M Y TA26
		C828	0CX1500K408	15P 50V J SL TA26
		C829	0CX3900K408	39P 50V J SL TA26
		C830	0CN8200K518	82PF 50V K B TA26
		C831	0CN1210K518	120P 50V K B TA26
		C832	0CX2700K408	27P 50V J SL TA26
		C833	0CN1030F578	0.01M 16V M Y TA26
		C848	0CE4764F638	47M SRA/SS 16V M FM5 TP(5)
		C849	0CN2230H948	0.022M 25V Z F TA26
		C850	0CN1030F578	0.01M 16V M Y TA26
		C851	0CX3300K408	33P 50V J SL TA26
		C854	0CN1040K948	0.1M 50V Z F TA26

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		C855	0CN1040K948	0.1M 50V Z F TA26
		CA01	0CE4766F638	47M SMS 16V M FM5 TP5
		CA02	0CX2200K408	22P 50V J SL TP26
		CA03	0CN2230H948	0.022M 25V Z F TA26
		CA04	0CE2254K638	2.2M SRA 50V M FM5 TP(5)
		CA05	0CE4766F638	47M SMS 16V M FM5 TP5
		CA06	0CN2230H948	0.022M 25V Z F TA26
		CA07	0CE2254K638	2.2M SRA 50V M FM5 TP(5)
		CA09	0CC0800K115	8P 50V D NP0 TS
		CA10	0CN4730K948	0.047M 50V Z F TA26
		CA11	0CN1040K948	0.1M 50V Z F TA26
		CA12	0CN1040K948	0.1M 50V Z F TA26
		CA14	0CN2230H948	0.022M 25V Z F TA26
		CA15	0CE4766F638	47M SMS 16V M FM5 TP5
		CA16	0CN2230H948	0.022M 25V Z F TA26
		CA17	0CN2230H948	0.022M 25V Z F TA26
		CA21	0CX4700K408	47P 50V J SL TA26
		CA24	0CX4700K408	47P 50V J SL TA26
		CA31	0CN1040K948	0.1M 50V Z F TA26
		CA32	0CE3354K638	3.3M SRA 50V M FM5 TP(5)
		CA33	0CQ6811N449	680P 100V J PYLN TP
		CA34	0CQ6811N449	680P 100V J PYLN TP
		CA35	0CC1200K415	12P 50V J NP0 TS
		CA36	0CC1200K415	12P 50V J NP0 TS
		CA37	0CN2230H948	0.022M 25V Z F TA26
		CA38	0CE4766F638	47M SMS 16V M FM5 TP5
		CA41	0CN2230H948	0.022M 25V Z F TA26
		CA42	0CN2230H948	0.022M 25V Z F TA26
		CA43	0CN2230H948	0.022M 25V Z F TA26
		CA44	0CE4766F638	47M SMS 16V M FM5 TP5
		CA45	0CN2230H948	0.022M 25V Z F TA26
		CA49	0CQ6821N409	0.0068U 100V J POLY TP
		CA51	0CE1064H638	10M SRA 25V M FM5 TP(5)
		CA53	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		CA55	0CN4730K948	0.047M 50V Z F TA26
		CA56	0CN4730K948	0.047M 50V Z F TA26
		CA57	0CE4766F638	47M SMS 16V M FM5 TP5
		CA58	0CN2230H948	0.022M 25V Z F TA26
		CA61	0CX5600K408	56P 50V J SL TA26
		CA62	0CE1064H638	10M SRA 25V M FM5 TP(5)
		CA63	0CN1030F678	0.01M 16V M Y TA26
		CA68	0CE4754K638	4.7M SRA 50V M FM5 TP(5)
		CA70	0CC3910K405	390P 50V J SL TP
		CA71	0CC3910K405	390P 50V J SL TP
		CA72	0CN2230H948	0.022M 25V Z F TA26
	OR	CP01	624-088A	KNB1530 AC250V/0.1UF ISKARA
		CP01	624-088B	ECQU2A104MVA AC250/0.1UF MATSU
		CP02	624-086B	AC-CON 103/400V,Z,NU(N/K)
		CP03	0CQ1031Y501	0.01U 630V K POLY F5
		CP04	0CQ3321N409	0.0033U 100V J POLY TP
		CP05	624-082C	100MF/400V SHL SMPS S/Y
		CP06	0CE107BH638	100U KME 25V M FM5 TP5
		CP07	0CQ2241N400	0.22U 100V J POLY S
		CP08	624-087G	HIGH-VOL 68PF/1KV SMPS SAMHWA
		CP09	0CQ6811N449	680P 100V J PYLN TP
		CP10	0CE1054K638	1.0M SRA/SS50V M FM5 TP(5)
		CP11	0CN1040K948	0.1M 50V Z F TA26
		CP12	0CE1087H638	1000UF SXE 25V M FM5 TP5
		CP13	0CE1086H630	1000UF SMS 25V 20 FM5
		CP14	0CE1076K638	100M SMS 50V M FM5 TP(5)
		CP15	0CE1076F638	100M SMS 16V M FM5 TP(5)
		CP16	0CE1076K638	100M SMS 50V M FM5 TP(5)

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		CP17	0CE1087H638	1000UF SXE 25V M FM5 TP5
		CP18	0CE1086H630	1000UF SMS 25V 20 FM5
	OR	CP19	624-083E	1000/10V KME (SMPS) CE
		CP19	624-084N	HER-1016-1000-10-M SMPS RI-C
		CP21	**0CE1076F638**	**100M SMS 16V M FM5 TP(5)**
		CP22	**0CC2210K405**	**220P 50V J SL TP**
		CP24	**624-086B**	**AC-CON 103/400V,Z,NU(N/K)**
		CP25	**624-086B**	**AC-CON 103/400V,Z,NU(N/K)**
		CP28	0CE1086D638	1000UF SMS 10V M FM5 TP5
		CP30	0CE4766K638	47M SMS 50V M FM5 TP
		CP33	0CE1076K638	100M SMS 50V M FM5 TP(5)
		CS02	0CE4764F638	47M SRA/SS 16V M FM5 TP(5)
		CS03	0CE4764F638	47M SRA/SS 16V M FM5 TP(5)
		CS04	0CE4754K638	4.7M SRA 50V M FM5 TP(5)
		CS05	0CE4754K638	4.7M SRA 50V M FM5 TP(5)
		CS06	0CE4754K638	4.7M SRA 50V M FM5 TP(5)
		CS07	0CE4764F638	47M SRA/SS 16V M FM5 TP(5)
		CS11	0CE4764F638	47M SRA/SS 16V M FM5 TP(5)
		CS12	0CE2274C638	220M SRA 6.3V M FM5 TP(5)
		CS13	0CE1064F638	10M SRA 16V M FM5 TP(5)
		CS14	0CE1064F638	10M SRA 16V M FM5 TP(5)
		CS15	0CE1064F638	10M SRA 16V M FM5 TP(5)
		CS16	0CE1064F638	10M SRA 16V M FM5 TP(5)
		CS17	0CE2274C638	220M SRA 6.3V M FM5 TP(5)
		CS18	0CE4764F638	47M SRA/SS 16V M FM5 TP(5)
		CS19	0CE4764F638	47M SRA/SS 16V M FM5 TP(5)
		CS20	0CE4764F638	47M SRA/SS 16V M FM5 TP(5)
		CS21	0CN2230H948	0.022M 25V Z F TA26
		CS22	0CN2210K518	220P 50V K B TA26
		CS23	0CN2210K518	220P 50V K B TA26
		CS24	0CN2210K518	220P 50V K B TA26
		CS25	0CN2210K518	220P 50V K B TA26
		CS28	0CX3900K408	39P 50V J SL TA26
		CS36	0CE2274C638	220M SRA 6.3V M FM5 TP(5)
		CS37	0CE2274C638	220M SRA 6.3V M FM5 TP(5)
		D304	0CN1040K948	0.1M 50V Z F TA26
		Q321	0CC1010K415	100P 50V J NP0 TS

DIODE

	OR	BDP01	0DD060000BA	DF06M,600V,1A G.I
		BDP01	0DD160000DA	S1WBA60(1A 600V) SHIDENKEN
		D006	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D201	0DD400309AB	IN4003A(1SR35-200A)5M/M TP RCH
		D202	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D203	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D204	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D205	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D206	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D207	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D208	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D209	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D210	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D301	0DD400309AB	IN4003A(1SR35-200A)5M/M TP RCH
		D302	0DD400309AB	IN4003A(1SR35-200A)5M/M TP RCH
		D303	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D306	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D311	0DD400309AB	IN4003A(1SR35-200A)5M/M TP RCH
		D315	0DD400309AB	IN4003A(1SR35-200A)5M/M TP RCH
		D4A1	0DD400309AB	IN4003A(1SR35-200A)5M/M TP RCH
		D501	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
		D502	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
		D503	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
		D504	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D505	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D506	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
		D550	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D551	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D5A1	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D5A2	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D5A3	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D5A4	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D5A6	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D5A9	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D5B5	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		D701	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
		D702	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
		D801	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
		DA01	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
		DA04	0DD400309AB	IN4003A(1SR35-200A)5M/M TP ROH
		DP02	0DD010009CA	EG01CW(R-FORM 5MM) TP SANKEN
	OR	DP02	0DD400799BA	UF4007 G.I
		DP04	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		DP05	0DD131009AA	1SS131 DETECT,SW(26MM)TP ROHM
		DP06	0DD010009AC	EU01W(R-FORM) TP SANKEN
		DP07	0DD400000AH	RU4YX SANKEN
		DP09	0DD010009AC	EU01W(R-FORM) TP SANKEN
		DP10	0DD400000AA	RL4Z SANKEN
		DP11	0DD440000AA	RK-44(SCHTOKY) SANKEN
		DP13	0DD010009AC	EU01W(R-FORM) TP SANKEN

DISPLAY TUBE

		DG601	514-038A	9BT-141GK SEJIN BS/SUPER

FUSE

		FP01	585-011C	T 1.6A 250V S506

FILTER

		FL401	616-069C	LPF 12KHZ(JH-1058) SAMMI
		FL701	616-714A	MKT40MA100P MURATA
		FLA01	616-069C	LPF 12KHZ(JH-1058) SAMMI
		LP01	616-143A	SHL-22-035 LINE FILTER
		Z3A1	616-323A	SFSH4.25MCB (MURATA)
		Z701	616-876A	LPF 5MHZ CDLP50 S/S
		ZA01	616-099B	SAW 0FWG1962 (SIEMENS) B/G
		ZA02	616-036B	TRAP TPS5.5MB MURA
		ZA03	616-036E	TRAP TPS5.74MB MURATA
		ZA05	616-038B	CERAMIC,SFSH5.5MCB MURATA

IC

		IC002	0IMI350100M	M35010-110SP(OSD)
		IC003	0IJR222900A	NJM2229S SYNC SEPA (SIP PACK)
		IC201	0IHI497540A	HD49754NT
		IC301	0ISA743900A	LA7439 Y/C(PAL) NORMAL
	OR	IC301	0ISA743900B	LA7439-B Y/C(PAL) HI-FI
		IC303	0ISA899700A	LC89970 (1H CCD)
		IC3A1	0IRH702500A	BA7025L PAL/MESECAM SYNC DETEC
		IC401	0IRH779000A	BA7790LS(AUDIO NORMAL)
		IC4A1	0IGS381500A	GL3816
		IC4A2	0ISA722200A	LA7222 (1280 AUDIO)
		IC501	0IMI381850M	M38185ME-127FP(SY+TI)
		IC503	0IMT523000B	PST-523G/T(3.3V) LOW
		IC504	0IGS744500A	GL7445 (MOTOR DRIV-1CH) GSS

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		IC505	0INA241600A	NM24C16N(EEPROM,16K)
		IC537	0ITO409400A	TC4094BP 8STAGE BUS REGIST
		IC701	0ISM615100A	TDA6151(BS VIDEO)
		IC706	0ITO409400A	TC4094BP 8STAGE BUS REGIST
		IC707	0IKE781500E	KIA7815PI (TO-220)
		IC801	0ISA741000A	LA7410 (PRE-AMP,2HD)
		ICA01	0IPH980000A	TDA9800 VIF PLL DEM & FM DET
		ICA04	0IIT340000B	MSP3400(NICAM,NORMAL)
		ICA05	0ISM564900A	SDA5649 (VPS+PDC)
		ICP01	0ISM460520B	TDA4605-2(SMPS IC) T/P
		ICP05	0IKE431000A	KIA431
		ICS01	0ISA715600A	LA7155 (CANAL S/W)

COIL

		L002	0LR1000K035	100M K 6X6 L5 TP
		L003	0LA0122K018	12M K 2.3X3.4 L5 TP
		L004	0LR1000K035	100M K 6X6 L5 TP
		L005	0LR1000K035	100M K 6X6 L5 TP
		L006	0LA0222K018	22M K 2.3X3.4 L5 TP
		L061	0LA0222K018	22M K 2.3X3.4 L5 TP
		L062	0LA0222K018	22M K 2.3X3.4 L5 TP
		L063	0LA0332K018	33M K 2.3X3.4 L5 TP
		L064	0LR1000K035	100M K 6X6 L5 TP
		L201	0LR1000K035	100M K 6X6 L5 TP
		L301	0LA1500K018	150M K 2.3X3.4 L5 TP
		L302	0LR1000K035	100M K 6X6 L5 TP
		L303	0LR1000K035	100M K 6X6 L5 TP
		L305	0LR1000K035	100M K 6X6 L5 TP
		L307	0LR1000K035	100M K 6X6 L5 TP
		L309	0LR1000K035	100M K 6X6 L5 TP
		L340	0LA0332K018	33M K 2.3X3.4 L5 TP
		L3A1	637-013B	PECK 6.80MH-J NYE
		L3A2	0LR1000K035	100M K 6X6 L5 TP
		L401	0LR1000K035	100M K 6X6 L5 TP
		L402	0LR1502J045	0.015H J 6X7 L5 TP
		L405	0LR1000K035	100M K 6X6 L5 TP
		L4A1	0LR1000K035	100M K 6X6 L5 TP
		L4A2	0LR1000K035	100M K 6X6 L5 TP
		L4A3	0LR1000K035	100M K 6X6 L5 TP
		L4A4	0LR1000K035	100M K 6X6 L5 TP
		L501	0LR1000K035	100M K 6X6 L5 TP
		L502	0LR1000K035	100M K 6X6 L5 TP
		L503	0LR1000K035	100M K 6X6 L5 TP
		L550	0LR1000K035	100M K 6X6 L5 TP
		L701	0LR1000K035	100M K 6X6 L5 TP
		L702	0LR1000K035	100M K 6X6 L5 TP
		L705	0LR1000K035	100M K 6X6 L5 TP
		L706	0LR0222K035	22M K 6X6 L5 TP
		L707	0LR1000K035	100M K 6X6 L5 TP
		L712	0LR1000K035	100M K 6X6 L5 TP
		L790	0LR1000K035	100M K 6X6 L5 TP
		L791	0LR1000K035	100M K 6X6 L5 TP
		L792	0LR1000K035	100M K 6X6 L5 TP
		L794	0LR1000K035	100M K 6X6 L5 TP
		L795	0LA0121K018	1.2M K 2.3X3.4 L5 TP
		L802	0LR1000J025	100UH 5% 4X5 TR5
		L803	0LR1000J025	100UH 5% 4X5 TR5
		L804	0LA1800K018	180M K 2.3X3.4 L5 TP
		L805	0LA0102K018	10M K 2.3X3.4 L5 TP
		L806	0LA0472K018	47M K 2.3X3.4 L5 TP
		L808	0LA0152K018	15M K 2.3X3.4 L5 TP
		L809	0LA2700K018	270U K 2.3X3.4 L5 TP

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		L810	0LA0222K018	22M K 2.3X3.4 L5 TP
		L811	0LA0822K018	82M K 2.3X3.4 L5 TP
		L812	0LA0332K018	33M K 2.3X3.4 L5 TP
		L815	0LR1000J025	100UH 5% 4X5 TR5
		LA01	0LA0332K018	33M K 2.3X3.4 L5 TP
		LA02	0LA0102K018	10M K 2.3X3.4 L5 TP
		LA03	0LR1000K035	100M K 6X6 L5 TP
		LA05	0LR1000K035	100M K 6X6 L5 TP
		LA06	0LA0121K018	1.2M K 2.3X3.4 L5 TP
		LA11	0LR1000K035	100M K 6X6 L5 TP
		LA12	0LR1000K035	100M K 6X6 L5 TP
		LA13	0LR1000K035	100M K 6X6 L5 TP
		LA15	0LR1000K035	100M K 6X6 L5 TP
		LA16	0LA0152K018	15M K 2.3X3.4 L5 TP
		LP03	633-068A	SC-20M CHOKE COIL
		LP04	633-068A	SC-20M CHOKE COIL
		LP05	633-087A	SC-08M CHOKE COIL
		LS01	0LR1000K035	100M K 6X6 L5 TP
		LS02	0LA1000K018	100M K 2.3X3.4 L5 TP
		LS03	0LA1000K018	100M K 2.3X3.4 L5 TP
		LS05	0LA1000K018	100M K 2.3X3.4 L5 TP
		LS06	0LA1000K018	100M K 2.3X3.4 L5 TP
		LS07	0LA1000K018	100M K 2.3X3.4 L5 TP
		LS08	0LA1000K018	100M K 2.3X3.4 L5 TP
		LS09	0LA1000K018	100M K 2.3X3.4 L5 TP
		LS15	0LA1000K018	100M K 2.3X3.4 L5 TP
		T401	633-032C	BIAS-OSC(MISUMI) 70KHZ
		TA01	633-085A	V-COIL 2920N-K5592Z 77.8 TOKO
		W388	636-010A	BEAD,BL01RN1-A62,MURATA
		W390	636-010A	BEAD,BL01RN1-A62,MURATA

LED

		LED601	0DL112000AJ	DL-11S2RNS(SUPER,RED,03)KOO

MODULATOR

		MD701	592-012E	MDLD4-201C(B/G)W/O ATT TPSGGAE

CIRCUIT BOARD ASSEMBLY

		PBB00	6871R-0016D	BS BOARD
		PBJT0	515-700B	JUNCTION 2 D-17S
		PBK00	6871R-0010C	KEY BOARD
		PBM01	6871R-0313D	MAIN
		PBM02	6871R-0314D	IF/PDC/SYS2
		PBO00	6871R-0014G	OSD
		PBS00	6871R-0315A	SCART (PREMIERE)
		PBT00	6871R-0009C	TIMER
		PBY00	6871R-0007K	Y/C/SECAM/MESECAM

TRANSFORMER

		PTP01	642-018B	S/W TRANS EER3530

TRANSISTOR

		FEP01	0TF900C00AA	FET,BUZ90A SMPS SIMENS
		Q001	0TR125609AE	KTA1256-GR,TP(KTA1015),KEC
		Q002	0TR319909AF	KTC3199-BL MINI TP KEC
		Q003	0TR319909AF	KTC3199-BL MINI TP KEC
		Q004	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q009	0TR319909AF	KTC3199-BL MINI TP KEC
		Q010	0TR319909AF	KTC3199-BL MINI TP KEC

RUN DATE : 95.05.12

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		Q011	0TR319909AF	KTC3199-BL MINI TP KEC
		Q012	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q014	0TR103009AF	KRA103M-TP (KRA2203) KEC
		Q060	0TR319909AF	KTC3199-BL MINI TP KEC
		Q061	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q062	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q201	0TR103009AF	KRA103M-TP (KRA2203) KEC
		Q202	0TR103009AF	KRA103M-TP (KRA2203) KEC
		Q203	0TR103009AF	KRA103M-TP (KRA2203) KEC
		Q204	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q205	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q207	0TR319909AF	KTC3199-BL MINI TP KEC
		Q208	0TR319909AF	KTC3199-BL MINI TP KEC
		Q209	0TR319909AF	KTC3199-BL MINI TP KEC
		Q210	0TR319909AF	KTC3199-BL MINI TP KEC
		Q305	0TR126609AE	KTA1266-GR,TP(KTA1015),KEC
		Q309	0TR319909AF	KTC3199-BL MINI TP KEC
		Q312	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q313	0TR126609AE	KTA1266-GR,TP(KTA1015),KEC
		Q314	0TR319909AF	KTC3199-BL MINI TP KEC
		Q323	0TR319909AF	KTC3199-BL MINI TP KEC
		Q324	0TR320509AB	KTC3205-TP-Y (KTC2236A)KEC
		Q325	0TR126609AE	KTA1266-GR,TP(KTA1015),KEC
		Q330	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q331	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q334	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q335	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q3A1	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
		Q3A3	0TR319809AC	KTC3198-TP-BL (KTC1815)KEC
		Q401	0TR320509AB	KTC3205-TP-Y (KTC2236A)KEC
		Q402	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q405	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q407	0TR320509AB	KTC3205-TP-Y (KTC2236A)KEC
		Q4A1	0TR126609AE	KTA1266-GR,TP(KTA1015),KEC
		Q4A2	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q501	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q502	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q503	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q506	0TR319909AF	KTC3199-BL MINI TP KEC
		Q507	0TR126709AC	KTA1267-GR MINI TP KEC
		Q550	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q551	0TR126609AE	KTA1266-GR,TP(KTA1015),KEC
		Q701	0TR126609AE	KTA1266-GR,TP(KTA1015),KEC
		Q702	0TR319909AF	KTC3199-BL MINI TP KEC
		Q703	0TR126609AE	KTA1266-GR,TP(KTA1015),KEC
		Q704	0TR319909AF	KTC3199-BL MINI TP KEC
		Q705	0TR127309AA	KTA1273-TP-Y (KTA966A)KEC
		Q706	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q707	0TR127309AA	KTA1273-TP-Y (KTA966A)KEC
		Q708	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q709	0TR141400AA	KTD1414 POWER (220 PACK) KEC
		Q710	0TR127309AA	KTA1273-TP-Y (KTA966A)KEC
		Q711	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q712	0TR127309AA	KTA1273-TP-Y (KTA966A)KEC
		Q713	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q714	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q715	0TR127309AA	KTA1273-TP-Y (KTA966A)KEC
		Q716	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q717	0TR127309AA	KTA1273-TP-Y (KTA966A)KEC
		Q718	0TR126609AE	KTA1266-GR,TP(KTA1015),KEC
		Q719	0TR103009AE	KRC103M-TP (KRC1203) KEC
		Q720	0TR319909AF	KTC3199-BL MINI TP KEC

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		Q721	0TR126709AC	KTA1267-GR MINI TP KEC
		Q722	0TR319909AF	KTC3199-BL MINI TP KEC
		Q723	0TR319909AF	KTC3199-BL MINI TP KEC
		Q802	0TR319909AF	KTC3199-BL MINI TP KEC
		Q803	0TR319909AF	KTC3199-BL MINI TP KEC
		Q804	0TR319909AF	KTC3199-BL MINI TP KEC
		Q806	0TR319909AF	KTC3199-BL MINI TP KEC
		Q807	0TR103009AE	KRC103M-TP (KRC1203) KEC
		QA01	0TR319909AF	KTC3199-BL MINI TP KEC
		QA07	0TR319709AC	KTC3197 (KTC388A) TP KEC
		QP02	0TR127309AA	KTA1273-TP-Y (KTA966A)KEC
		QP03	0TR103009AE	KRC103M-TP (KRC1203) KEC

RESISTOR

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		R002	0RD2202F608	22K 1/6W 5 TA26
		R004	0RD2702F608	27K 1/6W 5 TA26
		R005	0RD4703F608	470K 1/6W 5 TA26
		R006	0RD4700F608	470 1/6W 5 TA26
		R007	0RD5602F608	56K 1/6W 5 TA26
		R011	0RD5601F608	5.6K 1/6W 5 TA26
		R014	0RD3301F608	3.3K 1/6W 5 TA26
		R015	0RD4701F608	4.7K 1/6W 5 TA26
		R017	0RD1002F608	10K 1/6W 5 TA26
		R018	0RD3900F608	390 1/6W 5 TA26
		R019	0RD1501F608	1.5K 1/6W 5 TA26
		R020	0RD6803F608	680K 1/6W 5 TA26
		R024	0RD4701F608	4.7K 1/6W 5 TA26
		R061	0RD1001F608	1.0K 1/6W 5 TA26
		R062	0RD3301F608	3.3K 1/6W 5 TA26
		R063	0RD5601F608	5.6K 1/6W 5 TA26
		R064	0RD1001F608	1.0K 1/6W 5 TA26
		R065	0RD1001F608	1.0K 1/6W 5 TA26
		R070	0RD5600F608	560 1/6W 5 TA26
		R071	0RD5600F608	560 1/6W 5 TA26
		R072	0RD3302F608	33K 1/6W 5 TA26
		R073	0RD3302F608	33K 1/6W 5 TA26
		R074	0RD1502F608	15K 1/6W 5 TA26
		R075	0RD2702F608	27K 1/6W 5 TA26
		R081	0RD5600F608	560 1/6W 5 TA26
		R201	0RD2201F608	2.2K 1/6W 5 TA26
		R202	0RD6802F608	68K 1/6W 5 TA26
		R203	0RD1502F608	15K 1/6W 5 TA26
		R204	0RD3301F608	3.3K 1/6W 5 TA26
		R205	0RD1501F608	1.5K 1/6W 5 TA26
		R206	0RD1002F608	10K 1/6W 5 TA26
		R207	0RD3302F608	33K 1/6W 5 TA26
		R208	0RD1002F608	10K 1/6W 5 TA26
		R209	0RD1202F608	12K 1/6W 5 TA26
		R210	0RD2702F608	27K 1/6W 5 TA26
		R211	0RD1501F608	1.5K 1/6W 5 TA26
		R212	0RD2703F608	270K 1/6W 5 TA26
		R213	0RD3901F608	3.9K 1/6W 5 TA26
		R214	0RD6802F608	68K 1/6W 5 TA26
		R215	0RD2702F608	27K 1/6W 5 TA26
		R216	0RD8203F608	820K 1/6W 5 TA26
		R217	0RD5603F608	560K 1/6W 5 TA26
		R218	0RD6803F608	680K 1/6W 5 TA26
		R219	0RD2702F608	27K 1/6W 5 TA26
		R220	0RD4702F608	47K 1/6W 5 TA26
		R221	0RD8201F608	8.2K 1/6W 5 TA26
		R222	0RD1003F608	100K 1/6W 5 TA26
		R223	0RD5602F608	56K 1/6W 5 TA26

RUN DATE : 95.05.12

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		R224	0RD3902F608	39K 1/6W 5 TA26
		R225	0RD1503F608	150K 1/6W 5 TA26
		R226	0RD5601F608	5.6K 1/6W 5 TA26
		R227	0RD4701F608	4.7K 1/6W 5 TA26
		R228	0RD4701F608	4.7K 1/6W 5 TA26
		R229	0RD4700F608	470 1/6W 5 TA26
		R230	0RD4700F608	470 1/6W 5 TA26
		R232	0RD1001F608	1.0K 1/6W 5 TA26
		R233	0RD1202F608	12K 1/6W 5 TA26
		R234	0RD6803F608	680K 1/6W 5 TA26
		R235	0RD5601F608	5.6K 1/6W 5 TA26
		R236	0RD1803F608	180K 1/6W 5 TA26
		R237	0RD1003F608	100K 1/6W 5 TA26
		R238	0RD2201F608	2.2K 1/6W 5 TA26
		R239	0RD1C01F608	1.0K 1/6W 5 TA26
		R240	0RD2201F608	2.2K 1/6W 5 TA26
		R241	0RD0101F608	1.0 1/6W 5 TA26
		R242	0RD0101F608	1.0 1/6W 5 TA26
		R243	0RD8201F608	8.2K 1/6W 5 TA26
		R248	0RD6801F608	6.8K 1/6W 5 TA26
		R249	0RD1001F608	1.0K 1/6W 5 TA26
		R250	0RD8200F608	820 1/6W 5 TA26
		R252	0RD4701F608	4.7K 1/6W 5 TA26
		R254	0RD1003F608	100K 1/6W 5 TA26
		R255	0RD2702F608	27K 1/6W 5 TA26
		R256	0RD3903F608	390K 1/6W 5 TA26
		R301	0RD1501F608	1.5K 1/6W 5 TA26
		R302	0RD4701F608	4.7K 1/6W 5 TA26
		R303	0RD1801F608	1.8K 1/6W 5 TA26
		R306	0RD3301F608	3.3K 1/6W 5 TA26
		R307	0RD2701F608	2.7K 1/6W 5 TA26
		R308	0RD6800F608	680 1/6W 5 TA26
		R309	0RD1001F608	1.0K 1/6W 5 TA26
		R310	0RD1202F608	12K 1/6W 5 TA26
		R311	0RD2202F608	22K 1/6W 5 TA26
		R312	0RD1501F608	1.5K 1/6W 5 TA26
		R313	0RD2701F608	2.7K 1/6W 5 TA26
		R314	0RD0562F608	56 1/6W 5 TA26
		R316	0RD1801F608	1.8K 1/6W 5 TA26
		R317	0RD5601F608	5.6K 1/6W 5 TA26
		R318	0RD5601F608	5.6K 1/6W 5 TA26
		R319	0RD3901F608	3.9K 1/6W 5 TA26
		R320	0RD8201F608	8.2K 1/6W 5 TA26
		R323	0RD1801F608	1.8K 1/6W 5 TA26
		R324	0RD1001F608	1.0K 1/6W 5 TA26
		R325	0RD5601F608	5.6K 1/6W 5 TA26
		R326	0RD1002F608	10K 1/6W 5 TA26
		R327	0RD2202F608	22K 1/6W 5 TA26
		R328	0RD6800F608	680 1/6W 5 TA26
		R330	0RD2202F608	22K 1/6W 5 TA26
		R334	0RD3302F608	33K 1/6W 5 TA26
		R335	0RD1202F608	12K 1/6W 5 TA26
		R336	0RD1202F608	12K 1/6W 5 TA26
		R337	0RD1001F608	1.0K 1/6W 5 TA26
		R338	0RD8202F608	82K 1/6W 5 TA26
		R339	0RD1001F608	1.0K 1/6W 5 TA26
		R340	0RD5600F608	560 1/6W 5 TA26
		R342	0RD4700F608	470 1/6W 5 TA26
		R350	0RD5601F608	5.6K 1/6W 5 TA26
		R351	0RD5601F608	5.6K 1/6W 5 TA26
		R357	0RD4701F608	4.7K 1/6W 5 TA26
		R358	0RD4701F608	4.7K 1/6W 5 TA26

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		R359	0RD4701F608	4.7K 1/6W 5 TA26
		R361	0RD1002F608	10K 1/6W 5 TA26
		R362	0RD6801F608	6.8K 1/6W 5 TA26
		R381	0RD2201F608	2.2K 1/6W 5 TA26
		R391	0RD5601F608	5.6K 1/6W 5 TA26
		R395	0RD2201F608	2.2K 1/6W 5 TA26
		R397	0RD1002F608	10K 1/6W 5 TA26
		R399	0RD1001F608	1.0K 1/6W 5 TA26
		R3A2	0RD0222F608	22 1/6W 5 TA26
		R3A3	0RD1503F608	150K 1/6W 5 TA26
		R3A4	0RD2201F608	2.2K 1/6W 5 TA26
		R3A8	0RD4701F608	4.7K 1/6W 5 TA26
		R3A9	0RD1001F608	1.0K 1/6W 5 TA26
		R3B1	0RD4701F608	4.7K 1/6W 5 TA26
		R3B2	0RD1501F608	1.5K 1/6W 5 TA26
		R3B3	0RD1001F608	1.0K 1/6W 5 TA26
		R3B4	0RD5600F608	560 1/6W 5 TA26
		R3B5	0RD1001F608	1.0K 1/6W 5 TA26
		R3C1	0RD2202F608	22K 1/6W 5 TA26
		R3C4	0RD6801F608	6.8K 1/6W 5 TA26
		R401	0RD0102F608	10 1/6W 5 TA26
		R402	0RD5802F608	58K 1/6W 5 TA26
		R403	0RD3302F608	33K 1/6W 5 TA26
		R405	0RD1001F608	1.0K 1/6W 5 TA26
		R406	0RD3303F608	330K 1/6W 5 TA26
		R407	0RD1202F608	12K 1/6W 5 TA26
		R409	0RD1200F608	120 1/6W 5 TA26
		R410	0RD2701F608	2.7K 1/6W 5 TA26
		R412	0RD5600F608	560 1/6W 5 TA26
		R413	0RD1202F608	12K 1/6W 5 TA26
		R414	0RD1004F608	1.0M 1/6W 5 TA26
		R415	0RD1002F608	10K 1/6W 5 TA26
		R416	0RD2201F608	2.2K 1/6W 5 TA26
		R417	0RD7501F608	7.5K 1/6W 5 TA26
		R418	0RD3902F608	39K 1/6W 5 TA26
		R419	0RD5600F608	560 1/6W 5 TA26
		R421	0RD1502F608	15K 1/6W 5 TA26
		R424	0RD2701F608	2.7K 1/6W 5 TA26
		R425	0RD5601F608	5.6K 1/6W 5 TA26
		R426	0RD1001F608	1.0K 1/6W 5 TA26
		R430	0RD1001F608	1.0K 1/6W 5 TA26
		R431	0RD6801F608	6.8K 1/6W 5 TA26
		R438	0RD2702F608	27K 1/6W 5 TA26
		R439	0RD0681F608	6.8 1/6W 5 TA26
		R440	0RD0472F608	47 1/6W 5 TA26
		R470	0RD1002F608	10K 1/6W 5 TA26
		R4A1	0RD2201F608	2.2K 1/6W 5 TA26
		R4A2	0RD2201F608	2.2K 1/6W 5 TA26
		R4A3	0RD1203F608	120K 1/6W 5 TA26
		R4A4	0RD5600F608	560 1/6W 5 TA26
		R4A5	0RD2700F608	270 1/6W 5 TA26
		R4A6	0RD4700F608	470 1/6W 5 TA26
		R501	0RD3302F608	33K 1/6W 5 TA26
		R502	0RD3302F608	33K 1/6W 5 TA26
		R503	0RD1003F608	100K 1/6W 5 TA26
		R504	0RD2702F608	27K 1/6W 5 TA26
		R505	0RD2702F608	27K 1/6W 5 TA26
		R506	0RD1002F608	10K 1/6W 5 TA26
		R507	0RD1002F608	10K 1/6W 5 TA26
		R508	0RD1002F608	10K 1/6W 5 TA26
		R509	0RD6801F608	6.8K 1/6W 5 TA26
		R510	0RD4701F608	4.7K 1/6W 5 TA26

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		R511	ORD4701F608	4.7K 1/6W 5 TA26
		R512	ORD4701F608	4.7K 1/6W 5 TA26
		R513	ORD1004F608	1.0M 1/6W 5 TA26
		R514	ORD1003F608	100K 1/6W 5 TA26
		R515	ORD4704F608	4.7M 1/6W 5 TA26
		R516	ORD1002F608	10K 1/6W 5 TA26
		R517	ORD1002F608	10K 1/6W 5 TA26
		R518	ORD6802F608	68K 1/6W 5 TA26
		R519	ORD6802F608	68K 1/6W 5 TA26
		R520	ORD6802F608	68K 1/6W 5 TA26
		R521	ORD6802F608	68K 1/6W 5 TA26
		R522	ORD6802F608	68K 1/6W 5 TA26
		R523	ORD6802F608	68K 1/6W 5 TA26
		R524	ORD6802F608	68K 1/6W 5 TA26
		R525	ORD6802F608	68K 1/6W 5 TA26
		R526	ORD4701F608	4.7K 1/6W 5 TA26
		R527	ORD4701F608	4.7K 1/6W 5 TA26
		R528	ORD4701F608	4.7K 1/6W 5 TA26
		R529	ORD4701F608	4.7K 1/6W 5 TA26
		R530	ORD4701F608	4.7K 1/6W 5 TA26
		R533	ORD4701F608	4.7K 1/6W 5 TA26
		R534	ORD6802F608	68K 1/6W 5 TA26
		R539	ORD1502F608	15K 1/6W 5 TA26
		R540	ORD2201F608	2.2K 1/6W 5 TA26
		R541	ORD4701F608	4.7K 1/6W 5 TA26
		R542	ORD4701F608	4.7K 1/6W 5 TA26
		R543	ORD6800F608	680 1/6W 5 TA26
		R544	ORD6800F608	680 1/6W 5 TA26
		R545	ORD4701F608	4.7K 1/6W 5 TA26
		R546	ORD4701F608	4.7K 1/6W 5 TA26
		R547	ORD4701F608	4.7K 1/6W 5 TA26
		R548	ORD2202F608	22K 1/6W 5 TA26
		R549	ORD1500F608	150 1/6W 5 TA26
		R550	ORD2201F608	2.2K 1/6W 5 TA26
		R551	ORD2201F608	2.2K 1/6W 5 TA26
		R552	ORD1201F608	1.2K 1/6W 5 TA26
		R570	614-011B	PRW 3.3/2W 10MM FORM/BULK SUNG
		R575	ORD5602F608	56K 1/6W 5 TA26
		R576	ORD2201F608	2.2K 1/6W 5 TA26
		R580	ORD1001F608	1.0K 1/6W 5 TA26
		R581	ORD1001F608	1.0K 1/6W 5 TA26
		R601	ORD1802F608	18K 1/6W 5 TA26
		R602	ORD3901F608	3.9K 1/6W 5 TA26
		R603	ORD4701F608	4.7K 1/6W 5 TA26
		R604	ORD5601F608	5.6K 1/6W 5 TA26
		R605	ORD1002F608	10K 1/6W 5 TA26
		R606	ORD1502F608	15K 1/6W 5 TA26
		R607	ORD3302F608	33K 1/6W 5 TA26
		R621	ORD3900F608	390 1/6W 5 TA26
		R701	ORD1001F608	1.0K 1/6W 5 TA26
		R702	ORD1001F608	1.0K 1/6W 5 TA26
		R703	ORD2701F608	2.7K 1/6W 5 TA26
		R704	ORD4701F608	4.7K 1/6W 5 TA26
		R705	ORD4701F608	4.7K 1/6W 5 TA26
		R706	ORD3301F608	3.3K 1/6W 5 TA26
		R707	ORD2200F608	220 1/6W 5 TA26
		R708	ORD0752F608	75 1/6W 5 TA26
		R709	ORD0752F608	75 1/6W 5 TA26
		R710	ORD8200F608	820 1/6W 5 TA26
		R711	ORD2200F608	220 1/6W 5 TA26
		R712	ORD1001F608	1.0K 1/6W 5 TA25
		R713	ORD1001F608	1.0K 1/6W 5 TA26

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		R714	ORD1003F608	100K 1/6W 5 TA26
		R715	ORD4702F608	47K 1/6W 5 TA26
		R716	ORD1001F608	1.0K 1/6W 5 TA26
		R717	ORD4700F608	470 1/6W 5 TA26
		R718	ORD4700F608	470 1/6W 5 TA26
		R719	ORD3300F608	330 1/6W 5 TA26
		R720	ORD2201F608	2.2K 1/6W 5 TA26
		R721	ORD2201F608	2.2K 1/6W 5 TA26
		R722	ORD2201F608	2.2K 1/6W 5 TA26
		R723	ORD2201F608	2.2K 1/6W 5 TA26
		R724	ORD5601F608	5.6K 1/6W 5 TA26
		R725	ORD5601F608	5.6K 1/6W 5 TA26
		R736	ORD2201F608	2.2K 1/6W 5 TA26
		R737	ORD2201F608	2.2K 1/6W 5 TA26
		R752	ORD2201F608	2.2K 1/6W 5 TA26
		R753	ORD2201F608	2.2K 1/6W 5 TA26
		R754	ORD4700F608	470 1/6W 5 TA26
		R755	ORD1001F608	1.0K 1/5W 5 TA26
		R757	ORD2201F608	2.2K 1/5W 5 TA26
		R758	ORD2201F608	2.2K 1/5W 5 TA26
		R759	ORD3901F608	3.9K 1/6W 5 TA26
		R760	ORD3302F608	33K 1/6W 5 TA26
		R761	614-011F	PRW 0.33/2W 15MM FORM/BULK SUN
		R763	ORD1001F608	1.0K 1/6W 5 TA26
		R780	ORD1003F608	100K 1/6W 5 TA26
		R781	ORD4702F608	47K 1/6W 5 TA26
		R782	ORD1001F608	1.0K 1/6W 5 TA26
		R783	ORD4700F608	470 1/6W 5 TA26
		R784	ORD4700F608	470 1/6W 5 TA26
		R785	ORD2200F608	220 1/6W 5 TA26
		R786	ORD3300F608	330 1/6W 5 TA26
		R787	ORD2200F608	220 1/6W 5 TA26
		R788	ORD2202F608	22K 1/6W 5 TA26
		R801	ORD1001F608	1.0K 1/6W 5 TA26
		R802	ORD3300F608	330 1/6W 5 TA26
		R804	ORD4702F608	47K 1/6W 5 TA26
		R805	ORD3301F608	3.3K 1/6W 5 TA26
		R807	ORD2202F608	22K 1/6W 5 TA26
		R809	ORD1201F608	1.2K 1/6W 5 TA26
		R810	ORD2200F608	220 1/6W 5 TA26
		R811	ORD3300F608	330 1/6W 5 TA26
		R812	ORD7500F608	750 1/6W 5 TA26
		R813	ORD7500F608	750 1/6W 5 TA26
		R814	ORD5601F608	5.6K 1/6W 5 TA26
		R816	ORD2201F608	2.2K 1/6W 5 TA26
		R817	ORD3900F608	390 1/6W 5 TA26
		R818	ORD3900F608	390 1/6W 5 TA26
		R819	ORD2201F608	2.2K 1/6W 5 TA26
		R820	ORD2201F608	2.2K 1/6W 5 TA26
		R821	ORD1001F608	1.0K 1/6W 5 TA26
		R823	ORD1800F608	180 1/6W 5 TA26
		R824	ORD1001F608	1.0K 1/6W 5 TA26
		R825	ORD2201F608	2.2K 1/6W 5 TA26
		R826	ORD2201F608	2.2K 1/6W 5 TA26
		R827	ORD1001F608	1.0K 1/6W 5 TA26
		R828	ORD1001F608	1.0K 1/6W 5 TA26
		R839	ORD8200F608	820 1/6W 5 TA26
		R840	ORD2201F608	2.2K 1/6W 5 TA26
		R842	ORD3302F608	33K 1/6W 5 TA26
		R843	ORD4702F608	47K 1/6W 5 TA26
		R845	ORD5601F608	5.6K 1/6W 5 TA26
		RA01	ORD2200F608	220 1/6W 5 TA25

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		RA02	ORD2700F608	270 1/6W 5 TA26
		RA03	ORD1001F608	1.0K 1/6W 5 TA26
		RA04	ORD2702F608	27K 1/6W 5 TA26
		RA05	ORD2702F608	27K 1/6W 5 TA26
		RA06	ORD3300F608	330 1/6W 5 TA26
		RA07	ORD1002F608	10K 1/6W 5 TA26
		RA08	ORD1001F608	1.0K 1/6W 5 TA26
		RA09	ORD1802F608	18K 1/6W 5 TA26
		RA10	ORD2701F608	2.7K 1/6W 5 TA26
		RA11	ORD1001F608	1.0K 1/6W 5 TA26
		RA14	ORD1000F608	100 1/6W 5 TA26
		RA17	ORD4701F608	4.7K 1/6W 5 TA26
		RA18	ORD1501F608	1.5K 1/6W 5 TA26
		RA19	ORD1000F608	100 1/6W 5 TA26
		RA20	ORD4700F608	470 1/6W 5 TA26
		RA27	ORD3300F608	330 1/6W 5 TA26
		RA31	ORD1001F608	1.0K 1/6W 5 TA26
		RA33	ORD1001F608	1.0K 1/6W 5 TA26
		RA38	ORD1001F608	1.0K 1/6W 5 TA26
		RA39	ORD5601F608	5.6K 1/6W 5 TA26
		RA46	ORD1001F608	1.0K 1/6W 5 TA26
		RA48	ORD1004F608	1.0M 1/6W 5 TA26
		RA49	ORD1001F608	1.0K 1/6W 5 TA26
		RA50	ORD8202F608	82K 1/6W 5 TA26
		RA51	ORD6801F608	6.8K 1/6W 5 TA26
		RA52	ORD5603F608	560K 1/6W 5 TA26
		RA53	ORD6801F608	6.8K 1/6W 5 TA26
		RA54	ORD5603F608	560K 1/6W 5 TA26
		RA57	ORD1000F608	100 1/6W 5 TA26
		RA58	ORD2201F608	2.2K 1/6W 5 TA26
		RA65	ORD1001F608	1.0K 1/6W 5 TA26
		RP01	614-007A	2.7/2W CEMENT SMPS V
		RP02	ORD1002F608	10K 1/6W 5 TA26
		RP03	ORD2200F608	220 1/6W 5 TA26
		RP04	ORD1002F608	10K 1/6W 5 TA26
		RP05	ORS2200J600	220 1W 5 A
		RP06	ORD1002F608	10K 1/6W 5 TA26
		RP07	ORD0222F608	22 1/6W 5 TA26
		RP08	ORD5601F608	5.6K 1/6W 5 TA26
		RP09	ORD3900F608	390 1/6W 5 TA26
		RP10	614-007H	43K/2W CEMENT SMPS V
		RP11	ORD1503H600	150K 1/2W 5 A
		RP12	ORD6803F608	680K 1/6W 5 TA26
		RP13	ORD1503H600	150K 1/2W 5 A
		RP14	ORD1203H600	120K 1/2W 5 A
		RP15	614-007C	56K/2W CEMENT SMPS V
		RP16	ORD1003F608	100K 1/6W 5 TA26
		RP17	ORD0562F608	56 1/6W 5 TA26
		RP18	ORN4701F409	4.70K 1/6W 1% TA52
		RP19	ORN3001F409	3K 1/6W 1% TA52
		RP20	ORD2203F608	220K 1/6W 5 TA26
		RP23	ORD1001F608	1.0K 1/6W 5 TA26
		RP24	ORD4701F608	4.7K 1/6W 5 TA26
		RP25	ORD0471F608	4.7 1/6W 5 TA26
		RS01	ORD1001F608	1.0K 1/6W 5 TA26
		RS02	ORD1001F608	1.0K 1/6W 5 TA26
		RS03	ORD0752F608	75 1/6W 5 TA26
		RS04	ORD1001F608	1.0K 1/6W 5 TA26
		RS05	ORD1001F608	1.0K 1/6W 5 TA26
		RS06	ORD3902F608	39K 1/6W 5 TA26
		RS07	ORD2702F608	27K 1/6W 5 TA26
		RS09	ORD1802F608	18K 1/6W 5 TA26

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		RS10	ORD1802F608	18K 1/6W 5 TA26
		RS14	ORD1802F608	18K 1/6W 5 TA26
		RS15	ORD1802F608	18K 1/6W 5 TA26
		RS16	ORD0682F608	68 1/6W 5 TA26
		RS17	ORD0682F608	68 1/6W 5 TA26
		RS20	ORD0752F608	75 1/6W 5 TA26
		RS31	ORD4700F608	470 1/6W 5 TA26
		RS32	ORD2700F608	270 1/6W 5 TA26
		W3H4	ORD1000F608	100 1/6W 5 TA26

REMOCON RECEIVER

		RC601	368-227R	RECE 20.0 3276A 2800 KOTECO

SENSOR

		CP04	357-060C	CQY80NG PHOTO-COUPLER TELEFUN

SCART

		JKS01	573-006C	RGB SOKET SR-21S3 21PIN (BK)
		JKS02	573-006D	RGB (BLUE)

SWITCH

		ST601	556-164B	SHUTTLE S/W,SRGPJJ036A(J/ALPS)
		SW501	556-219A	SKHV10910A (GS ALPS)
		SW502	556-219A	SKHV10910A (GS ALPS)
		SW503	556-219A	SKHV10910A (GS ALPS)
		SW504	556-219A	SKHV10910A (GS ALPS)
		SW505	556-219A	SKHV10910A (GS ALPS)

TUNER

		TU701	521-407A	F/S HYPER ENV578F0G3 MATHUSHI
		TU702	521-257A	BS ASTRA BSJE3-101A G/ALPS

VARIABLE RESISTOR

		VR201	613-032U	RH0638C15R0WA (100K)
		VR451	613-032U	RH0638C15R0WA (100K)
		VR701	613-032Q	RH0638CJ4R0WA (22K)

CRYSTAL

		X001	529-022V	17.734476MHZ CL-12P 25PPM LEAD
		X002	529-019A	CSB500F-9 MURATA
		X301	529-020P	4.433619MHZ 15PPM GRAY L=4.0
		X502	529-001D	32.768KHZ(2X6) SEIKO
		XA01	529-021Q	18.432MHZ DBS KUKJAE

RESONATOR

		X501	618-017A	FCR6.0MCT2 TDK-J(TAPING)

ZENER DIODE

		ZD301	0DZ620009AA	MTZ5.2B (TA
		ZD302	0DZ620009AA	MTZ5.2B (TA)
		ZD303	0DZ620009AA	MTZ5.2B (TA)
		ZD304	0DZ620009AA	MTZ5.2B (TA)
		ZD305	0DZ620009AA	MTZ5.2B (TA)
		ZD401	0DZ100009AA	MTZ10B MINI TP ROHM-K
		ZD501	0DZ820009AA	MTZ8.2B TP ROHM-K
		ZD502	0DZ560009CA	MTZ5.6B TP ROHM-K

S	AL	LOCA.NO	PART NO(GS)	SPECIFICATION
		ZD701	0DZ150009BA	MTZ15A TP ROHM-K
		ZD702	0DZ560009CA	MTZ5.6B TP ROHM-K
		ZD703	0DZ160009BA	MTZ16B TP ROHM-K
		ZD704	0DZ160009BA	MTZ16B TP ROHM-K
		ZD705	0DZ160009BA	MTZ16B TP ROHM-K
		ZD706	0DZ160009BA	MTZ16B TP ROHM-K
		ZDP01	0DZ330009AK	MTZ33B TP(52MM) ROHM
		ZDP02	0DZ560009CA	MTZ5.6B TP ROHM-K
		ZDS01	0DZ160009BA	MTZ16B TP ROHM-K
		ZDS02	0DZ160009BA	MTZ16B TP ROHM-K
		ZDS03	0DZ160009BA	MTZ16B TP ROHM-K
		ZDS04	0DZ160009BA	MTZ16B TP ROHM-K
		ZDS05	0DZ160009BA	MTZ16B TP ROHM-K
		ZDS06	0DZ160009BA	MTZ16B TP ROHM-K
		ZDS07	0DZ160009BA	MTZ16B TP ROHM-K
		ZDS08	0DZ160009BA	MTZ16B TP ROHM-K
		ZDS09	0DZ160009BA	MTZ16B TP ROHM-K
		ZDS10	0DZ160009BA	MTZ16B TP ROHM-K
		ZDS11	0DZ160009BA	MTZ16B TP ROHM-K
		ZDS12	0DZ160009BA	MTZ16B TP ROHM-K
		ZDS13	0DZ160009BA	MTZ16B TP ROHM-K
		ZDS14	0DZ160009BA	MTZ16B TP ROHM-K
		ZDS15	0DZ160009BA	MTZ16B TP ROHM-K
		ZDS16	0DZ160009BA	MTZ16B TP ROHM-K
		ZDS17	0DZ160009BA	MTZ16B TP ROHM-K
		ZDS18	0DZ160009BA	MTZ16B TP ROHM-K
		ZDS19	0DZ160009BA	MTZ16B TP ROHM-K
		ZDS20	0DZ160009BA	MTZ16B TP ROHM-K
		ZDS21	0DZ160009BA	MTZ16B TP ROHM-K
		ZDS22	0DZ160009BA	MTZ16B TP ROHM-K
		ZDS25	0DZ160009BA	MTZ16B TP ROHM-K
		ZDS26	0DZ160009BA	MTZ16B TP ROHM-K